Supreme Court, U.S.
FILED
011849 JUN 12 2002
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No. _____

IN THE

Supreme Court of the United States

INFINITE PICTURES, INC.
Petitioner,

v.

INTERACTIVE PICTURES CORPORATION
(formerly known as Omniview, Inc.)
Respondent.

Petition for Writ of Certiorari to the
United States Court of Appeals
for the Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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June 10, 2002

QUESTION PRESENTED

Whether the judicial doctrine of equivalents can be used to circumvent the limits on patent claim breadth mandated by Congress in 35 U.S.C. §112, ¶ 6.

PARTIES TO THE PROCEEDING AND RULE 29.6 STATEMENT

Petitioner Infinite Pictures, nka iMove, Inc., and Respondent Interactive Pictures, fka Omniview, Inc., nka Internet Pictures Corp., are the only parties to this proceeding.

Infinite Pictures, nka iMove, Inc., is not a publicly-held company and has no parent company.

Interactive Pictures, fka Omniview, Inc., nka Internet Pictures Corp., is a publicly-held company and has no parent company.

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INTERACTIVE PICTURES CORPORATION
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Respondent.

Petition for a Writ of Certiorari to the
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PETITION FOR A WRIT OF CERTIORARI

Petitioner request a writ of certiorari to resolve a conflict between the judicially-created doctrine of equivalents and the congressionally-mandated equivalents analysis for functionally-claimed elements (expressed in 35 U.S.C. § 112, ¶ 6). This Court has never before addressed the issue of whether the doctrine of equivalents can override the statutory construction analysis of § 112(6) for functional claim elements.

Decisions of this Court that have addressed the doctrine of equivalents have dealt with claim elements that recite the invention in terms of structure or material (what it is) rather than in terms of its function (what it does). *See, e.g., Festo Corp. v.*

Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. ___ (2002); *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 41 USPQ2d 1865 (1997); *Graver Tank & Mfg. Co. v. The Linde Air Products Co.*, 339 U.S. 605, 85 USPQ 328 (1950).

The only decision of this Court dealing with a functional claim element is *Halliburton Oil Well Cementing Co. v. Walker et al.*, 329 U.S. 1 (1946), which held, in essence, that patent claims defining an element solely by its function are too broad and ambiguous to be valid. *See id.* at 8. In 1952, Congress enacted the last paragraph of 35 U.S.C. § 112 (now paragraph six) in response to this Court's holding in *Halliburton*.

To overcome the concerns expressed by this Court, the statute strikes a balance that permits functionally-stated claim elements while ensuring compliance with both the public notice and definiteness requirements of patent claiming. To do this, the statute commands that functionally-claimed elements "*shall be construed* to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6 (emphasis added). The statute includes a built-in equivalents provision.

Left unchecked, the decision below will destroy the balance struck by Congress. It will permit application of the judicial equivalents doctrine to functionally-claimed elements in a way that eviscerates the statutory claim construction guidelines of § 112(6).

The Court must hear this case to decide whether the judge-made doctrine of equivalents can apply to congressionally-restricted functional claim elements—given the nature of, and history behind, the statutory provision authorizing such claim elements. If the doctrine of equivalents can be applied to §112(6) claim elements, the Court must provide guidance to ensure that the judicial doctrine does not vitiate the statutory

mandate. Otherwise, patentees will routinely strive to bypass §112(6) by resort to the doctrine of equivalents.

OPINIONS BELOW

The opinion of the court of appeals (Pet. App. 1a) is reported at 274 F.3d 1371, 61 USPQ2d 1152. The opinions, orders, and judgment of the district court (Pet. App. 31a) are not reported.

JURISDICTION

The judgment of the court of appeals was entered on December 20, 2001. Petitioner's request for rehearing *en banc* was denied on March 21, 2002. [Pet. App. 48a]. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

35 U.S.C. § 112, ¶ 6 provides:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claims shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

[Pet. App. 54a].

STATEMENT OF THE CASE

A. The Patent at Issue

Claim 1 of U.S. Patent No. 5,185,667 (the '667 patent) is the only independent claim at issue. [1] This

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[1] Claim 1 reads as follows:

1. A device for providing perspective corrected views of a selected portion of a hemispherical view in a desired format that utilizes no moving parts, which comprises:

a camera imaging system for receiving optical images and for producing output signals corresponding to said optical images;

fisheye lens means attached to said camera imaging system for producing said optical images, throughout said hemispherical field-of-view, for optical conveyance to said camera imaging system;

image capture means for receiving said output signals from said camera imaging system and for digitizing said output signals from said camera imaging system;

input image memory means for receiving said digitized signals;

image transform processor means for processing said digitized signals in said input image memory means according to selected viewing angles and magnification, and for producing output transform calculation signals according to a combination of said digitized signals, said selected viewing angles and said selected magnification;

output image memory means for receiving said output signals from said image transform processor means;

input means for selecting said viewing angles and magnification;

microprocessor means for receiving said selected viewing angles and magnification from said input means and for converting said selected viewing angles and magnification for input to said

apparatus claim is directed to a device for capturing a hemispherical fisheye optical image, digitizing the image, and then transforming and magnifying a selected portion of that image to produce a perspective corrected view. The claimed device includes a camera imaging system with a fisheye lens coupled to a series of elements that capture, digitize, and store the hemispherical fisheye image from the camera and then transform the digitized fisheye image into a perspective corrected view based on selected viewing angles and magnification.

A key element of this claim is the "image transform processor means" described in the specification as providing "direct mapping of the hemispherical image region of interest into a corrected image using an orthogonal set of transformation algorithms." The '667 patent, col. 2, lines 51-54.[2]

B. District Court Proceedings

Before trial, Respondent conceded the lack of literal infringement of claim 1 based on non-identity of functions performed with respect to the "image transform processor means" element. In particular, the accused software did not process "said digitized [fisheye] images" as required by the claims. Respondent's entire case for infringement rested, instead, on the doctrine of equivalents. In particular, Respondent contended that an equirectangular

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image transform processor means to control said processing of said transform processor means; and

output means connected to said output image memory means for recording said perspective corrected view according to said selected viewing angles and magnification.

[2] One of "[t]he keys to the success of the invention [is that] the entire input image need not be transformed, only the portion of interest." The '667 patent, col. 4, lines 16-19.

panorama of the accused device, though not an image obtained directly from a fisheye lens camera as required by the claim, was interchangeable with such an image[3] and that the transform means function was therefore substantially the same.

The testimony on interchangeability at trial only related to equivalence between the claimed function and the function performed in the accused device. It does not equate the structures [i.e., computer algorithms] for performing those "equivalent" functions. The district court used an expansive claim construction, made without regard to the construction procedure mandated by §112[6]. This construction permitted a finding of infringement despite the complete absence of evidence on structural equivalence. This error in claim construction is evident, in particular, from the jury instruction construing the critical "image transform processor means" limitation:

> The fifth element, image transform processor means, *refers to the computer software by which the user's selected viewing angles and magnification and the digitized signals corresponding to a photographed image are processed* so as *to produce* the output transform calculation signals which provide *the perspective corrected view*, including his or her selected viewing angles and magnification, which the user wishes to view.
>
> (emphasis added)

The district court, in effect, applied the doctrine of equivalents in construing this element, rather than the statutory construction rules of §112(6). This

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[3] The relationship between an equirectangular image and a hemispherical fisheye image resembles the relationship between a Mercator map and a globe map.

broad instruction decoupled the means-plus-function element from the recited functions [i.e., processing digitized fisheye signals and producing output signals by combining the digitized fisheye signals with the selected viewing angles and magnification], and from the disclosed structure (i.e., the orthogonal set of transform algorithms disclosed for accomplishing the recited function).[4] The trial court's claim construction expanded the scope of this element to cover any software resulting in a perspective corrected view. Following this instruction (broad enough to support even a finding of literal infringement), the jury found infringement under the doctrine of equivalents. The district court denied JMOL based on the same claim construction.

C. Court of Appeals Decision

The Federal Circuit upheld the district court's claim construction and the jury's finding of infringement under the doctrine of equivalents without requiring any evidence regarding the structures used to perform the functions at issue. In particular, although "the structure of a microprocessor programmed to carry out an algorithm is limited by the disclosed algorithm," *WMS Gaming, Inc. v. Int'l Gaming Tech.*, 184 F.3d 1339, 1348, 51 USPQ2d 1385 (Fed. Cir. 1999), no effort was made to identify or compare algorithms.

The sole evidence cited by the Federal Circuit as supporting the finding of infringement relates, at most, to functional equivalence:

> We agree that substantial evidence supports the finding of equivalence. Although Infinite attacks Birdwell's testimony as being

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[4] Compare this instruction to the actual claim language for the "image transform processor means" element as set forth in footnote 1.

> conclusory, the testimony is more than that. Birdwell showed the jury both a fisheye image and an image in an equirectangular panorama format, while testifying that one can be derived from the other. He also explained that perspective-correction processing of one of the two image forms is substantially the same as that of the other, and he illustrated the similarity with reference to Infinite's own block diagrams of the processing steps.
>
> [Pet. App. 23a]

The processing blocks shown in the block diagrams, however, merely represent the functions performed, not the algorithms used to perform those functions. *See* PX – 308 at Pet. App. 56a.

The Federal Circuit decision permitted application of the doctrine of equivalents to a means-plus-function element, implicitly rejecting Petitioner's argument that resort to the doctrine of equivalents for this functional element short-circuited the §112(6) statutory analysis. Moreover, the Federal Circuit upheld the finding of infringement without requiring a construction of the claim under §112(6).

The Federal Circuit's holding improperly relieved the Respondent of the burden of showing structural equivalence separate and apart from functional equivalence. Because no evidence was presented regarding the algorithms of the accused device, and because no attempt was made to identify or equate the algorithms used to perform the allegedly equivalent functions, structural equivalency lacks any support in the record.

The Federal Circuit also failed to follow the "all elements" or "all limitations" rule endorsed in *Warner-Jenkinson* in at least two ways. First, the Federal Circuit permitted a claim construction that entirely

vitiated the recited function. *See Warner-Jenkinson*, 520 U.S. at 29, 40. In particular, the Federal Circuit did not require the transformation to be performed "according to the combination" of signals explicitly recited in the claim, as required in *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931 (Fed. Cir. 1987) (*en banc*). Second, the Court failed to consider the relationship of the functionally-claimed element to the claim as a whole. *See Warner-Jenkinson*, 520 U.S. at 40. Specifically, Respondent's permitted substitution of the "equirectangular panorama signals" for the "digitized [fisheye] signals" failed to take into account the use of the "digitized [fisheye] signals" in the context of the claim as a whole. [5] This substitution, despite the fact that it left the substituted claim element without connection to the remainder of the claim, was permitted to form the entire basis for the conclusion of equivalency.

Replacing the digitized fisheye signals with the equirectangular panorama signals represented much more than an insubstantial change in both the function and the structure of the claimed device.

REASONS FOR GRANTING THE PETITION

This case presents an unparalleled opportunity to resolve important and fundamental questions of patent law, namely—whether the doctrine of equivalents can apply to a §112(6) claim element, and if so, whether it can apply in a way that bypasses the statutory construction requirements of §112(6), such

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[5] This substitution precludes direct transformation of a selected view of an input fisheye image into the output image as explicitly called for by the claim language. It is also contrary to the "keys" to the success of the invention because it *requires* transformation of the entire input fisheye image into an equirectangular panorama image.

as by ignoring the disclosed structure or by vitiating a recited function.

I. The Doctrine of Equivalents Should not Apply to Elements Written in Functional Form

A. Congress's Mandate to Apply the Statutory Construction Guidelines of §112(6) Precludes Further Judicial Expansion

Application of the doctrine of equivalents to §112(6) claim elements abrogates the statutory claim construction requirements and violates the public-notice and definitional requirements of patent claiming. In *Halliburton*, this Court held that patent claims defining an element solely by its function are too broad and ambiguous to be valid. *See id.*, 329 U.S. at 8.

In response, Congress enacted the last paragraph of §112 to permit a claim to a combination to include an element expressed as a "means" or "step" for performing a function. The statute commands, however, that such a claim "*shall be construed* to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6 (emphasis added). In light of the congressional enactment of an equivalents provision for construing functionally-claimed elements, the judicial doctrine of equivalents should not be permitted to circumvent the statutory interpretation guidelines for those elements.

There is no constitutional or logical support for superimposing the doctrine of equivalents over the construction mandated for functional claim elements by §112(6). Congress has the controlling authority to legislate on patent matters under Article I, § 8, cl. 8 of the Constitution. Congress has exercised that power through §112(6) – the only provision in the patent statute directing a claim construction methodology.

It makes no sense to overlay the judicial doctrine of equivalents on a §112(6) claim element because Congress has already built equivalents into §112(6). Congress expressly and deliberately limited that "equivalents" analysis to equivalent structures, materials or acts, to remove the indefiniteness of functional claims noted by this Court in *Halliburton*. Accordingly, it is not for the courts to broaden that analysis by layering the judicial doctrine of equivalents over top of the statutory construction framework, or by bypassing §112(6) altogether.

B. Reconciling Decisions of this Court with the Enactment of §112(6) Dictates that Application of the Doctrine of Equivalents to Functionally-claimed Elements Should be Precluded

Although the doctrine of equivalents has been upheld by this Court, none of this Court's cases has addressed whether the judicial equivalents doctrine can apply to already statutorily-broadened §112(6) elements. Claim construction concerns are different when dealing with functional claim language as opposed to structural claim language.

In *Graver Tank & Mfg. Co. v. The Linde Air Products Co.*, 339 U.S. 605, 85 USPQ 328 (1950), for example, this Court did not deal with a means-plus-function element, but dealt, rather, with substitution of one material in a welding flux for another recited in the claim. Indeed, coming close behind *Halliburton*, and before the 1952 Act, a functional claim element was not then even valid.

In *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 41 USPQ2d 1865 (1997), the Court concluded that the enactment of §112(6) did not replace the doctrine of equivalents. However, the Court did not address the relationship between the two "equivalents" approaches when both forms of

equivalents are implicated.[6] *See* 520 U.S. at 28. The Court expressed concern, moreover, that the doctrine has become "unbounded by the patent claims." *Id.* at 28-29. The Court further confirmed the "all elements" rule and cautioned that "[i]t is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety." *Id.* at 29.

Similarly, in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. ___ (2002), this Court recently reaffirmed the vitality of the doctrine of equivalents with respect to claim elements stated in terms of structure or material,[7] but did not address the implications with respect to functionally-claimed elements. *See id.* The Court in *Festo* emphasized, however, the role of Congress in establishing rules for the interpretation of patent claims. *See id.*, slip op. at 14. When Congress chooses to impose construction guidelines for specific claim elements, therefore, lower courts should not be permitted to disrupt or ignore those guidelines through the loose application of judicial doctrines.

Applying the doctrine of equivalents to functional claim elements, as in this case, essentially eviscerates the 1952 congressional enactment of §112(6), recreating the ambiguity condemned by this Court in *Halliburton*. *Halliburton* remains authority for the position that a functional claim element, unbounded by the statutory requirements of §112(6), is invalid. The validity of such an element can only be sustained

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[6] In *Warner-Jenkinson*, the claim element at issue dealt with a range of pH, and was not a functional claim element.

[7] The elements at issue in *Festo* were a pair of one-way sealing rings and a magnetizable outer sleeve material for an industrial device.

by giving full effect to the claim construction mandate of the statute. And that mandate cannot be carried out if the doctrine of equivalents is permitted to expand already broad functional claim language by supplementing or replacing the built-in equivalents analysis in §112(6).

C. There is Doubt Among Judges at the Federal Circuit Regarding Whether the Doctrine of Equivalents Can Apply to §112(6) Claim Elements

In *Dawn Equipment Co. v. Kentucky Farms Inc.*, 140 F.3d 1009, 46 USPQ2d 1109 (Fed. Cir. 1998), two Federal Circuit judges each set forth additional views questioning the applicability of the doctrine of equivalence to §112(6) claim elements. *See id.*, 140 F.3d at 1018-22 (opinion of Plager, J.), 1023 (opinion of Michel, J.). In his separate views, Judge Michel queried whether "affording the patentee additional protection under the doctrine of equivalents conflicts with the very language and intent of 35 U.S.C. §112(6) (1994), which covers only those 'equivalents' disclosed in the specification." *Id.* at 1023. After reminding the reader of this Court's emphasis on the critical notice function of patent claims, and explaining that the need for notice is all the greater in the case of means-plus-function limitations, Judge Michel further asked:

> Is it contrary to §112(6) to expand the protection for inventions claimed partly in means-plus-function format by also applying the doctrine of equivalents to limitations claimed in that format, when protection for some but not all equivalents has already been incorporated into the statute itself and when doing so further diminishes the notice function of the patent?

Id. at 1023. This Court should expressly answer these questions.

II. If Applicable to Functional Claim Elements, the Doctrine Of Equivalents Cannot be Untethered from the Claim's Literal Construction Under 35 U.S.C. § 112, ¶ 6.

A. Public Notice Requires that Functional Claim Elements be Constrained by §112(6).

Congress requires that patent claims be written in a way that clearly defines the scope of the claimed subject matter. *See* 35 U.S.C. § 112, ¶ 2. This Court and the Federal Circuit have each recognized that expansive application of the judicially-created doctrine of equivalents "conflicts with the definitional and public-notice functions of the statutory claiming requirement." *Warner-Jenkinson*, 520 U.S. at 29; *see also Sage Products, Inc. v. Devon Indus., Inc.*, 126 F.3d 1420,1424, 44 USPQ2d 1103 (Fed. Cir. 1997) ("Applied . . . broadly, the doctrine [conflicts] with the primacy of the claims in defining the scope of a patentee's exclusive rights.").

When the statutory equivalents provision and the doctrine of equivalents are both implicated, the need for curtailing undue expansion of the claim language is even more pressing. "[S]ection 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim *literally* satisfies that limitation." *Pennwalt*, 833 F.2d at 934. The doctrine of equivalents should not permit what the statute was specifically designed to prevent.

A doctrine of equivalents analysis of a means-plus-function element, if permitted at all, must not be untethered from its statutorily-mandated claim construction, either by forsaking an analysis of its structural limits or by permitting the doctrine to vitiate a required function.

The Federal Circuit in this case, however, permitted application of the doctrine of equivalents to an already statutorily-broadened claim element in a manner which both ignored the structural limitations imposed on the claim by §112(6) and vitiated the function explicitly required by the claim.

B. The Decision Below Permits an Infringement Finding Regarding a Functional Claim Element Without a Proper §112(6) Structural Equivalents Analysis

For microprocessor and computer elements, the structure is not merely the general-purpose computer or microprocessor but, rather, the computer or processor programmed to perform the disclosed algorithm. *See WMS Gaming*, 184 F.3d at 1348-51; *In re Alappat*, 33 F.3d 1526, 1545, 31 USPQ2d 1545, 1558 *(Fed. Cir. 1994) (en banc)*. The identification of the disclosed algorithm is an essential part of determining the proper scope of such claim elements. *See id.*

The district court's claim construction, however, decoupled the means-plus-function element from the recited function and disclosed structure. It expanded the scope of the "image transform processor means" element to cover any software (regardless of algorithm) that results in a perspective corrected view. A finding of equivalence was permitted without requiring any evidence regarding the algorithms used to perform the functions at issue.

This approach, affirmed by the Federal Circuit, improperly relieves the patentee of the burden of showing structural equivalence separate and apart from functional equivalence. Patentees are therefore allowed to bypass the structural equivalents analysis of §112(6).

If this decision stands, patentees of functionally-claimed inventions will be able to gain an advantage

by admitting the absence of literal infringement and asserting infringement under the doctrine of equivalents, despite substantial differences in the structures used to perform a disputed function.

C. The Decision Below Eviscerates the Requirement to Consider Claim Elements in the Context of the Claim as a Whole

This Court has admonished that the

> analysis of the role played by each element in the context of the specific patent claim [should] inform the inquiry as to whether a substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claimed element.

Warner-Jenkinson, 520 U.S. at 40. The Federal Circuit holding in this case, however, permits claim elements to be rewritten in isolation, without regard to the context of the claim as a whole. This is not only contrary to the instructions of this Court in *Warner-Jenkinson*, it is further inconsistent with the Federal Circuit's own opinions. *See, e.g., Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 141 F.3d 1084, 1090, 46 USPQ2d 1257 (Fed. Cir. 1998).

Respondent's infringement theory rested on the isolated replacement of the "digitized [fisheye] signals" claim limitation with the phrase "equirectangular panorama signals."[8] As a result of this substitution,

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[8] Respondent's trial exhibit PX – 336 recharacterized the image transform processor means element as follows:

> image transform processor means for processing **said equirectangular panorama signals** in said input image memory means according to selected viewing angles and magnification, and
>
> for producing output transform calculation signals according to a combination of said **equirectangular**

however, the claim element was dismembered, being left without any connection to the claim as a whole.

A proper effort to fit the rewritten element in the context of the apparatus claim as a whole would have resulted in significant functional and structural changes, including a very different transform means and an additional memory means.[9] This discontinuity

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panorama signals, said selected viewing angles and said selected magnification;

[9] A claim rewritten with support for the substituted element would have had to look as follows (in relevant part):

1. A device . . . which comprises:

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input image memory means for receiving said digitized fisheye signals;

first image transform means for processing all of said digitized fisheye signals in said input image memory means and for producing first output transform calculation signals to create equirectangular panorama signals;

intermediate memory means for receiving said equirectangular panorama signals;

second image transform processor means for processing ~~said digitized signals~~ said equirectangular panorama signals in said ~~input~~ intermediate image memory means according to selected viewing angles and magnification, and for producing second output transform calculation signals according to a combination of ~~said digitized signals~~ said equirectangular panorama signals, said selected viewing angles and said selected magnification;

output image memory means for receiving said second output signals from said image transform processor means;

input means for selecting said viewing angles and magnification;

microprocessor means for receiving said selected viewing angles and magnification from said input means and for converting said selected

is not simply linguistic, it is very real in terms of the operative apparatus. Referring to Plaintiff's Exhibit PX – 308 (Pet. App. 56a), entirely new components must be added to make a working system that uses the equirectangular panorama signals.

Permitting such an arbitrary substitution in a functional claim element would render it impossible to ascertain the scope of the claim prior to litigation. This introduces an element of uncertainty into the interpretation of patent claims beyond even that deemed unacceptable in *Halliburton*.

D. The Decision Below Allows Application of the Doctrine of Equivalents to Entirely Vitiate a Required Function of the Claim.

Pennwalt appears to be the only *en banc* decision of the Federal Circuit dealing with infringement under doctrine of equivalents where there is no infringement under §112(6). In *Pennwalt*, the Federal Circuit made clear that the doctrine of equivalents "does not mean one can ignore claim limitations." *Id.* at 935. It held that, where a recited function is completely missing from the accused device, there could be no infringement either literally or under the doctrine of equivalents. *See id.* No infringement was found because the claim language required that the "position indicating means" be responsive to a specified combination of signals that was not used in the accused system. *Id.* at 938.

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viewing angles and magnification for input to said second image transform processor means to control said processing of said second transform processor means; and

output means connected to said output image memory means for recording said perspective corrected view according to said selected viewing angles and magnification.

This case surreptitiously repudiates the *Pennwalt* holding on a strikingly similar set of facts.[10] In this case, the "image transform processor means," as claimed, requires transformation "according to a combination of said digitized [fisheye] signals, said selected viewing angles and said selected magnification." The '667 patent, claim 1. The function supplied by the claimed transform processor means thereby provides for the direct transformation of only a selected portion of an image from a fisheye lens for perspective-corrected magnified viewing. *See* The '667 patent, FIGS. 2 and 3, col. 2, lines 48-54.

As acknowledged in the Respondent's exhibits, the accused device does not use this claimed combination of signals. *See* PX – 308 at Pet. App. 56a. In Petitioner's product, rather, the entire fisheye image must first be converted into an equirectangular image using a first transform independently of any selected view and magnification. This form of image must then be stored in an intermediate memory. Only then can a second transform be used, along with a viewing area selection and magnification, to produce the perspective-corrected image. *See id.*

As in *Pennwalt*, therefore, the accused device in this case lacks a means operative in response to the specified (and claimed) combination of signals. By permitting a finding of infringement, the lower courts permitted the function of direct transformation "according to the combination" to be vitiated in its entirety.

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[10] The Federal Circuit panel did not even address Petitioner's arguments based on *Pennwalt* and the "all elements" rule.

CONCLUSION

The Court should declare the doctrine of equivalents inapplicable to §112(6) elements. It runs afoul of the statutory limits on functional claiming, ignores the built-in equivalents of §112(6) and enlarges the scope of functionally-claimed elements to the unpredictable extreme condemned by this Court in *Halliburton*. Nonetheless, if applicable, the Court must enunciate standards to ensure that the application of the judicial doctrine is not untethered from the statutorily-mandated construction requirements.

If this precedent remains in place, it will permit courts to veer from the statutory construction path of §112(6) and fall into a claim construction approach that swallows any structure supplying supposed functional equivalence. Patentees can be expected as a matter of course to admit a lack of literal infringement and to assert functional claim elements solely under the doctrine of equivalents in order to short-circuit the statutory strictures of §112(6).

Accordingly, the Court should grant this petition for a writ of certiorari.

Respectfully submitted,

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June 10, 2002

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

01-1029

INTERACTIVE PICTURES CORPORATION
(formerly known as Omniview, Inc.)

Plaintiff-Appellee,

v.

INFINITE PICTURES, INC.,

Defendant-Appellant,

and

BILL TILLMAN, CRAIG JONES, and GARY WALTENBAUGH
(doing business as Graphic Effects, also known as Graphic EFX),

Defendants.

Robert F. Altherr, Jr., Banner & Witcoff, LTD, of Washington, DC, argued for plaintiff-appellee. With him on the brief were Nina L. Medlock, and Bradley C. Wright. Of counsel was Thomas H. Jackson, Banner & Witcoff, LTD.

J. Michael Jakes, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., of Washington, DC, argued for defendant-appellant. With him on the brief was Christine E. Lehman.

Appealed from: United States District Court
for the Eastern District of Tennessee

Judge Leon Jordan

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

01-1029

INTERACTIVE PICTURES CORP.,
(formerly known as Omniview, Inc.)
Plaintiff-Appellee,

v.

INFINITE PICTURES, INC.,
Defendant-Appellant,

And

BILL TILLMAN, CRAIG JONES, and GARY WALTENBAUGH
(doing business as Graphics Effects, also known as Graphics EFX),

Defendants.

DECIDED: December 20, 2001

Before LOURIE, Circuit Judge, ARCHER, Senior Circuit Judge, and GAJARSA, Circuit Judge.

LOURIE, Circuit Judge.

Infinite Pictures, Inc. appeals from the decision of the United States District Court for the Eastern District of Tennessee denying its various motions following a jury verdict finding Infinite and the other defendants liable for infringement of Interactive Pictures Corp.'s U.S. Patent 5,185,667 under the doctrine of equivalents and awarding $1 million in

damages. Because the district court did not err as a matter of law by refusing to preclude infringement by equivalents, and because the jury's finding of equivalence and award of damages were supported by substantial evidence, we affirm.

BACKGROUND

A. The '667 Patent and its Prosecution History

The '667 patent describes an image viewing system whereby a user can view a specified portion of a hemispherical field of view in corrected perspective. '667 patent, col. 2, ll. 35-60. The image viewing system utilizes, inter alia, a camera equipped with a fisheye lens, an input memory, an image transform processor, and an output. Id. at col. 3, ll. 25-48, Figure 1. In operation, the fisheye lens camera produces a circular image of an entire hemispherical field of view. Id., Abstract. As the hemispherical field of view is mapped into a circle, the fisheye lens introduces distortion — fisheye distortion — such that straight lines appear curved in the circular image. Id. at col. 4, ll. 22-47. The circular image data is stored in the input memory. Id. at col. 3, ll. 25-48. The image transform processor reads the circular image data from the input memory, accepts user input of pan and tilt angles to specify a region of interest in the image, mathematically transforms the image data in that region so as to correct the fisheye distortion, and outputs a perspective corrected view of that region to the system's output. Id. at col. 2, ll. 35-60. The user may also specify desired rotation and magnification of the region of interest. Id. The system performs the mathematical transformations electronically, without moving parts, id. at col. 3, ll. 10-24, preferably at real time rates, id. at col. 4, ll. 44-47.

Claim 1, the only claim at issue, reads as follows:

> 1. A device for providing perspective corrected views of a selected portion of a hemispherical view in a desired format that utilizes no moving parts, which comprises:
>
> a camera imaging system for receiving optical images and for producing output signals corresponding to said optical images;
>
> fisheye lens means attached to said camera imaging system for producing said optical images, throughout said hemispherical field-of-view, for optical conveyance to said camera imaging system;
>
> image capture means for receiving said output signals from said camera imaging system and for digitizing said output signals from said camera imaging system;
>
> input image memory means for receiving said digitized signals;
>
> image transform processor means for processing said digitized signals in said input image memory means according to selected viewing angles and magnification, and for producing output transform calculation signals according to a combination of said digitized signals, said selected viewing angles and said selected magnification;
>
> output image memory means for receiving said output signals from said image transform processor means;
>
> input means for selecting said viewing angles and magnification;

> microprocessor means for receiving said selected viewing angles and magnification from said input means and for converting said selected viewing angles and magnification for input to said image transform processor means to control said processing of said transform processor means; and
>
> output means connected to said output image memory means for recording said perspective corrected view according to said selected viewing angles and magnification.

Id. at col. 8, ll. 27-66 (emphasis added).

Claim 1 was initially rejected by an Examiner at the U.S. Patent and Trademark Office under, inter alia, 35 U.S.C. § 103, as being obvious over U.S. Patent 5,067,019, issued to Juday et al., in light of U.S. Patent 5,068,735, issued to Tuchiya et al. The applicant challenged the propriety of the rejection by noting several deficiencies in the Juday reference vis-à-vis claim 1 and disputing the relevance of Tuchiya. Additionally, the applicant amended claim 1 in several ways, including inserting the words "transform calculation" to the section reciting the "image transform processor means," so that "output signals" became "output transform calculation signals." That change was made without any explanation. After receipt of the applicant's claim amendments and arguments, the Examiner allowed claim 1 without stating in the record any reasons for the allowance.

B. The Accused Product

Infinite makes and markets a software package known as the "SmoothMove® Panorama Web Builder." The product has two components: a "PhotoSeamer"

program and a "Viewer" program. The PhotoSeamer is designed to accept a set of three images from a 180° fisheye lens camera or other sources, align and seam the images together into a 360° panorama, and save the panorama image in an equirectangular format (a ".pan" file). The collection and preparation of an equirectangular panorama file is an "off-line" operation, meaning that it cannot be accomplished in real time with fast changing images, such as motion video. Next, the Viewer reads the equirectangular panorama file and displays a portion of the image, as determined by the user's input of "navigation controls" (e.g., left/right, up/down, and zoom in/out) in a "SmoothMove® Pan" window. Infinite Pictures, SmoothMove® Panorama Web Builder Developer Manual 24, version 2 (1996). The Viewer reacts in real time to the user's input, producing the selected image without fisheye distortion.

C. The District Court Proceedings

Interactive brought suit against Infinite alleging that a computer equipped with a fisheye camera and executing the SmoothMove® software infringed the '667 patent. Interactive conceded that such a computer did not literally infringe the patent because SmoothMove's® equirectangular panorama file was different from the claimed "digitized signals" input to the "image transform processor means." However, Interactive presented a theory of infringement based on the doctrine of equivalents, alleging that SmoothMove's® equirectangular panorama file, though not an image obtained directly from a fisheye lens camera, was substantially similar to it. The case went to trial before a jury on the issues of infringement under the doctrine of equivalents, validity, and damages. The jury returned a verdict finding claims 1-8 infringed and not invalid, and awarded Interactive $1 million in damages based on

evidence of a reasonable royalty on Infinite's sales determined in a hypothetical negotiation between Interactive and Infinite.

The parties also submitted to the jury the question whether a hypothetical version of claim 1 would ensnare the prior art. The hypothetical claim differed from claim 1 in that the term "said digitized signal" was replaced by "an equirectangular panorama file," as Infinite argued that the hypothetical claim would be unpatentable over certain prior art, but the jury determined that hypothetical claim 1 would not ensnare that prior art.

Following the trial, Infinite made a number of motions, including: (1) a motion for judgment based on the defense of prosecution history estoppel; (2) a motion for judgment of noninfringement under the doctrine of equivalents as a matter of law ("JMOL") on the grounds that SmoothMove® lacks an equivalent to the structure corresponding to a means-plus-function limitation and that there was a lack of substantial evidence to support the verdict of equivalence; and (3) a motion to set aside the jury's damage award in favor of a remittitur or new trial on the issue of damages. The district court denied all three motions. In deciding the prosecution history estoppel issue, the district judge performed a "flexible bar" analysis, Interactive Pictures, Corp. v. Infinite Pictures, Inc., No. 3:96-CV-849, slip op. at 4-10 (E.D. Tenn. Mar. 31, 1999), as this court had not yet issued its decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 56 USPQ2d 1865 (Fed. Cir. 2000) (en banc), cert. granted, 69 U.S.L.W. 3779 (U.S. June 18, 2001) (No. 00-1543), which discarded that approach in favor of an absolute bar, id. at 563-64, 56 USPQ2d at 1868.

Infinite appeals from the judgment of the district court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

DISCUSSION

We review a district court's denial of a motion for JMOL de novo, reapplying the JMOL standard used by the district court. Sextant Avionique, S.A. v. Analog Devices, Inc., 172 F.3d 817, 824, 49 USPQ2d 1865, 1869 (Fed. Cir. 1999). JMOL is appropriate when "there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed. R. Civ. P. 50(a)(1). On appeal, this court must consider the record evidence in the light most favorable to the non-movant, "drawing all reasonable inferences in its favor, without disturbing the jury's credibility determinations or substituting our resolutions of conflicting evidence for those of the jury." Applied Med. Res. Corp. v. U.S. Surgical Corp., 147 F.3d 1374, 1377, 47 USPQ2d 1289, 1290 (Fed. Cir. 1998). To prevail, "an appellant must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied from the jury's verdict cannot in law be supported by those findings." Celeritas Techs., Ltd. v. Rockwell Int'l Corp., 150 F.3d 1354, 1358, 47 USPQ2d 1516, 1519 (Fed. Cir. 1998) (internal quotation marks omitted).

A determination of infringement requires a two-step analysis. "First, the court determines the scope and meaning of the patent claims asserted, and then the properly construed claims are compared to the allegedly infringing device." Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454, 46 USPQ2d 1169, 1172 (Fed. Cir. 1998) (en banc) (citations omitted). Comparison of the claim to the accused device requires a determination that every limitation of the claim or its substantial equivalent be found in the

accused device. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997). Whether a patentee can avail itself of the doctrine of equivalents implicates certain questions of law, which we review de novo. See, e.g., id. at 39 n.8 (whether a patent's prosecution history estops the patentee from arguing an equivalent is an issue of law). Determination of infringement by equivalents is an issue of fact, Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353, 48 USPQ2d 1674, 1676 (Fed. Cir. 1998), which after a jury trial we review for substantial evidence, Gen. Electro Music Corp. v. Samick Music Corp., 19 F.3d 1405, 1409, 30 USPQ2d 1149, 1152 (Fed. Cir. 1994). We will not disturb a jury finding of infringement by equivalents unless "the evidence so favors [the accused infringer] that reasonable jurors could not arrive at a contrary verdict." Id.

An award of damages by a jury is upheld on appellate review unless it is clearly not supported by evidence, grossly excessive, or based only on speculation and guesswork. Oiness v. Walgreen Co., 88 F.3d 1025, 1031, 39 USPQ2d 1304, 1308 (Fed. Cir. 1996). We review a decision denying a grant of remittitur or a new trial because of an excessive damages award for an abuse of discretion. See id. at 1029, 39 USPQ2d at 1306 (applying tenth circuit law); see also Skalka v. Fernald Envtl. Restoration Mgmt. Corp., 178 F.3d 414, 424 (6th Cir. 1999), cert. denied, 120 S. Ct. 2687 (2000) (applying same standard under sixth circuit law).

Infinite argues that devices containing its SmoothMove® software cannot infringe claim 1 of the '667 patent as a matter of law for three reasons: (1) amendments to the "image transform processor means" limitations and prosecution arguments relating to the same limitation estop Infinite from relying on the doctrine of equivalents for that

limitation; (2) the asserted range of equivalents would ensnare certain prior art; and (3) the asserted equivalent of the "image transform processor means" limitation — a limitation construed under 35 U.S.C. § 112, paragraph 6, and not literally present in SmoothMove® — predates the patent, thereby precluding Infinite from relying on the doctrine of equivalents for that limitation. Additionally, Infinite argues that there are substantial differences under both the known interchangeability test and the function-way-result test. Finally, Infinite argues that Interactive's testimony concerning damages was flawed. Interactive responds that neither prosecution history estoppel, prior art, nor the predating nature of SmoothMove's® technology precludes it from prevailing on its claim of infringement under the doctrine of equivalents. Interactive also responds that substantial evidence supports both the jury's findings of infringement by equivalence and the jury's award of damages.

A. Legal Preclusion of the Doctrine of Equivalents

1. Prosecution History Estoppel

Infinite argues that Interactive is estopped from asserting infringement by equivalents for two reasons. First, Infinite contends that Interactive narrowed the "image transform processor means" limitation during prosecution by replacing the words "output signals" with the words "output transform calculation signals," and Infinite is thus barred from asserting any equivalents to that limitation, under Festo. In Infinite's view, the amendment changed the nature of the claimed output signals. Infinite further asserts that a more particular recitation of the output signals was necessary to define the invention over the prior art cited prior to the amendment. Second, Infinite argues that Interactive's arguments that were made during prosecution in order to traverse the

outstanding prior art rejections estop Interactive from asserting infringement by equivalents of the "image transform processor means" limitation. Infinite contends that Interactive's remarks to the Examiner characterized the invention as a one-step image transformation system while characterizing Juday as disclosing a two-step image transformation process — first creating a look-up table off-line and then transforming the image using the look-up table. Infinite points out that SmoothMove® also involves a two-step process — first creating the equirectangular panorama file with the PhotoSeamer, an off-line operation, and then viewing selected portions using the Viewer.

Interactive responds that the amendment changing "output signals" to "output transform calculation signals" did not narrow the claim, but merely clarified it by relabeling the signals without changing their identity or qualities. Interactive also responds that the arguments made during prosecution did not disclaim coverage of the SmoothMove® software. Interactive characterizes its remarks to the Examiner as not drawing a one-step versus two-step distinction, but rather pointing out that Juday's system cannot provide continuous changes in viewing angle, rotation, and magnification of the perspective corrected output image portion in real time relative to the user's input of different viewing angle, rotation, and magnification.

We agree with Interactive that the claim amendment and arguments do not estop Infinite from asserting infringement on the ground that the "image transform processor means" limitation is met by equivalence. As to the amendment-based estoppel issue, we conclude that the addition of the words "transform calculation" was not a narrowing amendment because that addition did nothing more

than make express what had been implicit in the claim as originally worded. That interpretation flows from the original claim as a whole and in light of the specification. First, the claim names the processor a "transform processor," and thus "transform" describes what the processor does. Secondly, the specification refers to the corresponding structure as "X-MAP and Y-MAP transform processors," '667 patent, col. 4, ll. 1-2 (emphasis added), and derives equations by which the transform is calculated, id. at col. 7, ll. 3-54. Given such context, one skilled in the art could reach no other conclusion than that the "output signals" are the result of a transform calculation. Because the amendment merely made explicit what had been implicit in the claim, the amendment was not made for a "substantial reason related to patentability" and thus does not create prosecution history estoppel. Warner-Jenkinson, 520 U.S. at 33, 41 USPQ2d at 1873; see also Turbocare Div. of Deman Delaval Turbomach. Corp. v. Gen. Elec. Co., 264 F.3d 1111, 1125-26, 60 USPQ2d 1017, 1028 (Fed. Cir. 2001) (holding that addition of the word "contact" to a claim did not narrow the claim and therefore did not estop application of the doctrine of equivalents for that element because another claim phrase, "small diameter position," when read in light of the specification, necessarily implied "contact.").

Infinite also argues that Interactive narrowed the definition of the phrase "output signals" in order to avoid the prior art. Infinite's argument is based on the following applicant remark made during prosecution concerning "[t]he present invention, as defined most broadly in Claim 1":

> The [digitized fisheye image] information in this input memory is processed with a transform processor to produce output signals corresponding to the perspective

> corrected views according to selected viewing angles and magnification, with these output signals being produced according to a combination of the digitized signals, the selected viewing angles and the selected magnification.

Although that remark does describe an aspect of the invention not found in the prior art, it did not alter what the phrase "output transform calculation signals," or more simply the phrase "output signals," meant in the claim and the patent as a whole. On the contrary, the remark is consistent with the plain language of the claim and the portion of the specification concerning the output signals. That remark reinforces our conclusion that no difference exists between the two phrases. The remark uses the shorthand "output signals" even though claim 1 contemporaneously had been amended to recite "output transform calculation signals." The applicant's interchanging of the two phrases therefore indicates that the phrases have the same meaning.

As to the argument-based estoppel issue, we agree with Interactive that the arguments made during prosecution to distinguish Juday's '019 patent do not create estoppel. As illustrated in Figure 1 of the '019 patent, Juday discloses an image processing system, including a camera 4, an analog-to-digital converter 6, a programmable remapper 10, a digital-to-analog converter 14, and a monitor 18, connected serially in that order. '019 patent, Figure 1. The programmable remapper 10 transforms a digitized camera image into another form according to an operator selected look-up table. Id. at col. 3, ll. 49-59. By specifying a different look-up table, a different transform may be applied. Id. Juday discloses specific transforms to accommodate particular vision impairments, viz., remapping an image away from the

central portion and into the periphery to accommodate maculopathy, and compressing an image including its periphery into just the central portion to accommodate tunnel vision. Id. at col. 4, ll. 4-19. Each look-up table is determined off-line and then stored in the memory of the remapper 10. Id. at col. 6, ll. 1-25. Juday's only mention of a fisheye lens is to note that the remapper 10 could introduce fisheye distortion when the image processing system is used as a prosthesis for retinitis pigmentosa. Id. at col. 14, ll. 40-58.

The Examiner rejected claim 1 as being obvious over Juday because, according to the Examiner, Juday's image processing system read on claim 1 except that Juday's system lacked the capability to accept viewing angle and magnification selections by the user. The Examiner considered that capability to be well known in the art and concluded that one of ordinary skill in the art would have been motivated to add those features to Juday's device so as to result in the invention of claim 1.

The applicant responded to the obviousness rejection by noting, inter alia, three deficiencies in the Juday system: (1) the lack of a fisheye lens; (2) the lack of "pan and tilt implementation," image rotation, and magnification; and (3) the lack of real time capability. Concerning the latter, the applicant stated:

> Juday et al. utilizes a group of pre-selected 'look-up' tables for remapping an image into the pre-selected configurations. A specific look-up table is then used by the researcher to achieve a given remapping of the input data. Due to this functioning, the resultant 'corrected image' is created in real-time at video rates relative to the input to the

> system for only a limited number of image orientations and magnifications. Continuous change in orientation and magnification is not feasible in real time at video rates with the Juday et al. device. Hence, perspective corrected pan and tilt is not possible in real time with that device (in contrast to the action with the device of the Applicant). . . . Further, Juday et al. fails to provide either magnification or image rotation. These cannot be accomplished by Juday et al. without continuous redetermination of the transformal mapping, with this not being possible with the look-up table type of transformations.

We do not read those remarks as drawing a distinction between a one-step viewing system and a two-step viewing system. Infinite's reading appears to misapprehend Juday's look-up tables by assuming that they are intermediate forms of the image. That is not the case. Juday's look-up tables represent the transformations themselves, not the output images. '019 patent at col. 3, ll. 49-59. Rather than drawing a one-step versus a two-step distinction, the remarks point out that Juday's system cannot produce a view with a different orientation, rotation, or magnification, unless a different look-up table is utilized, and widespread changing of look-up tables is not practical in real time. In contrast, the invention's transform calculation can provide a perspective corrected output image portion with variable viewing angle, rotation, and magnification. Because the viewing angle, rotation, and magnification are variables built into the transformation, the output can change in real time relative to the user's input of changes to those parameters. (That is also how the Viewer module of the accused software operates, albeit on an

intermediate form of the image.) Accordingly, because the applicant's remarks pertain only to the invention's capability to respond in real time to user parameters, Interactive is not estopped from asserting that Infinite's two-step viewing software infringes the '667 patent under the doctrine of equivalents.

Because neither the claim amendment nor the applicant's arguments during prosecution estop Interactive from asserting that the SmoothMove® software contains an element equivalent to the "image transform processor means," we affirm the district court's denial of Infinite's post-trial motion on the issue of prosecution history estoppel.

2. Prior Art Limitations on the Doctrine of Equivalents

Infinite next argues that the asserted scope of equivalents would not have been patentable over the following prior art articles: G. David Ripley, DVI – A Digital Multimedia Technology, 32 Communications of the ACM 811 (1989) ("Ripley"); Ned Greene, Environment Mapping and Other Applications of World Projections, 6 IEEE Computer Graphics and Applications 21 (1986) ("Greene"); and Mario Onoe & Yoshinori Kuno, Digital Processing of Images Taken by Fish-Eye Lens, IEEE: Proceedings, New York 105 (1982) ("Onoe"). According to Infinite, Ripley and Greene disclose fisheye lens cameras capturing hemispherical views, which are digitized and transformed in their entirety to equirectangular projections, from which a user can choose to view a certain portion, while Onoe discloses transformation algorithms for converting a fisheye image to a perspectively correct rectangular image. Interactive responds that substantial evidence supports the jury's finding that the hypothetical claim does not encompass what Ripley, Greene, and Onoe teach.

More particularly, Interactive states that the articles individually and cumulatively do not disclose or suggest perspective corrective transformation of only a portion of an image with user selection of magnification and rotation. Infinite counters that the jury's finding is merely advisory on that issue of law.

It is well settled law that a patentee cannot assert a range of equivalents that encompasses the prior art. Wilson Sporting Goods Co. v. David Geoffrey & Assocs., 904 F.2d 677, 683, 14 USPQ2d 1942, 1948 (Fed. Cir. 1990). To test this limit, the notion of a hypothetical claim may be useful. Id. at 684, 14 USPQ2d at 1948. A hypothetical claim may be constructed to literally cover the accused device. Id. If such a claim would be unpatentable under 35 U.S.C. §§ 102 or 103, then the patentee has overreached, and the accused device is noninfringing as a matter of law. Id. at 683-84, 14 USPQ2d at 1948. The burden of producing evidence of prior art to challenge a hypothetical claim rests with an accused infringer, but the burden of proving patentability of the hypothetical claim rests with the patentee. Streamfeeder, LLC v. Sure-Feed Sys., Inc., 175 F.3d 974, 984, 50 USPQ2d 1515, 1521 (Fed. Cir. 1999).

We conclude that Ripley, Greene, and Onoe collectively fail to disclose or suggest the hypothetical version of claim 1 presented to the jury. The Ripley article, written by Infinite's founder, describes a system called "Palenque," Ripley at 881-19, which was a precursor of SmoothMove®. Like SmoothMove®, Palenque produced an equirectangular panorama file from a photographic image captured by a fisheye lens camera. Id. Although the Ripley article does not address whether Palenque provided perspective correction, magnification, or rotation of the selected portion of the image, the testimony of Ripley and others firmly establishes that Palenque lacked those

capabilities; Infinite does not indicate otherwise. In other words, Palenque merely copied a user-specified portion of the panorama for display on an output device, without perspective correction and without the capability for magnification or rotation.

The Greene article describes a technique for projecting a fisheye image onto a half cube and thus providing perspective correction. Greene at 27-28. The Onoe article describes three computational methods for correcting distortion in fisheye images and thereby accurately measuring parameters (e.g., distance) from fisheye images. Onoe at 105. One method employs a single fisheye image with partial a priori knowledge of parameters. Id. The other two methods employ stereo fisheye images without a priori knowledge of parameters. Id.

While Greene or Onoe may have taught one of ordinary skill in the art to add a perspective correction capability to the Palenque system described by Ripley, it is not clear that perspective correction is applied only to the user-selected portion of the image, rather than to the entire image. Even assuming perspective correction of only a portion of the image, the combination taught by the cited articles would lack at least the capability of the user to magnify or rotate the selected, perspective-corrected portion of the image, and the capability to do so in real time relative to the user's input would certainly not have been obvious. Because claim 1 requires that the perspective correction processing performed by the "image transform processor means" be done "according to a combination of said digitized [input image] signals, said selected viewing angles and said selected magnification," we conclude that hypothetical claim 1 would not have been unpatentable over Ripley, Greene, and Onoe. Furthermore, because claim 5 additionally recites user input of a rotation angle, we

conclude that a hypothetical version of claim 5, depending from and further limiting hypothetical claim 1, would also not have been unpatentable over the prior art of record.

We reach our conclusion on this issue independently of the jury's verdict. Because we reach the same conclusion as the jury, we need not address the level of deference to which a jury's verdict is entitled in conducting a hypothetical claim analysis. Compare Wilson Sporting Goods, 904 F.2d at 683, 14 USPQ2d at 1948 (holding ensnarement to be an issue of law reviewed de novo) with Tegal Corp. v. Tokyo Electron Am., Inc., 257 F.3d 1331, 1348, 59 USPQ2d 1385, 1398 (Fed. Cir. 2001) (holding that underlying questions of fact in the context of obviousness are reviewed for clear error).

3. Equivalent of a Means-Plus-Function Limitation

Finally, Infinite argues that Interactive cannot assert infringement by equivalents of the "image transform processor means" limitation, because that limitation is not literally present in the SmoothMove® software, and the equivalent feature that is present in the SmoothMove® software predates the '667 patent. Infinite cites Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 46 USPQ2d 1752 (Fed. Cir. 1998), as the basis for its argument.

Interactive responds that this case is distinguishable from Chiuminatta; we agree. In Chiuminatta, we held that a finding that a component of an accused product is not a structure "equivalent" to the corresponding structure of a means-plus-function limitation for purposes of literal infringement analysis precludes a finding that the same structure is equivalent for purposes of the doctrine of equivalents,

unless the component constitutes technology arising after the issuance of the patent. Id. at 1311, 46 USPQ2d at 1758. However, when a finding of noninfringement under 35 U.S.C. § 112, paragraph 6, is premised on an absence of identical function, then infringement under the doctrine of equivalents is not thereby automatically precluded. WMS Gaming Inc. v. Int'l Game Tech., 184 F.3d 1339, 1353, 51 USPQ2d 1385, 1395 (Fed. Cir. 1999). That is because infringement under the doctrine of equivalents may be premised on the accused and the patented component having substantially the same function, whereas structure corresponding to the disclosed limitation in a means-plus-function clause must perform the identical function. Id.

In this case, as in WMS Gaming, the absence of literal infringement is due to a lack of identical function of the claimed means, not a lack of equivalent structure, as the district judge aptly recognized. Interactive Pictures, Corp. v. Infinite Pictures, Inc., No. 3:96-CV-849, slip op. at 3-5 (E.D. Tenn. Sept. 25, 2000). More precisely, the difference is that a different signal is input to the "image transform processor means." The claim recites that the input signal constitutes "said digitized signals," which refer to a digitized form of the image signals produced by a fisheye lens camera imaging system, whereas the asserted equivalent's input signal is an equirectangular panorama file. A difference of inputs to a signal processing element resulting in the same output necessarily implies a difference in function performed by the element. In fact, the jury in this case concluded that the difference was insubstantial. We will not reverse that fact-based decision as a matter of law. Accordingly, we affirm the district court's denial of Infinite's post-trial motion for JMOL on this issue.

B. The Factual Finding of Equivalents

Having concluded that resort to the doctrine of equivalents is not barred as a matter of law, we turn to the issue of equivalence in fact. The precise issue before us is whether substantial evidence supports the jury's finding that SmoothMove®, with its equirectangular panorama file, contains an element substantially the same as the "image transform processor means" limitation.

Infinite argues that there are substantial differences according to both the known interchangeability test and the function-way-result test. Concerning the former, Infinite argues that the equirectangular panorama .pan file is not interchangeable with the claimed digitized fisheye image data because the SmoothMove® Viewer is compatible with only the .pan file format. Concerning the latter, Infinite argues that the "image transform processor means" and the SmoothMove® program differ in function, way, and result because the claimed "means" can transform images in real time relative to motion in the image, whereas SmoothMove® can transform only static images.

Interactive responds that substantial evidence supports the jury's finding of equivalence. In particular, Interactive cites the testimony of its expert, Dr. Birdwell, that notwithstanding the incompatibility of data formats, the equirectangular panorama format is a known substitute for digitized fisheye signals and that the function of transforming a portion of an image in equirectangular panorama format is substantially the same as the function of transforming a portion of an image represented by digitized fisheye signals. Furthermore, Birdwell testified that the SmoothMove® Viewer contains structure the same as

or equivalent to the structure corresponding to the "image transform processor means."

We agree that substantial evidence supports the finding of equivalence. Although Infinite attacks Birdwell's testimony as being conclusory, the testimony is more than that. Birdwell showed the jury both a fisheye image and an image in an equirectangular panorama format, while testifying that one can be derived from the other. He also explained that perspective-correction processing of one of the two image forms is substantially the same as that of the other, and he illustrated the similarity with reference to Infinite's own block diagrams of the processing steps.

Infinite's arguments do not persuade us to the contrary. First, incompatibilities in computer data files do not necessarily rise to the level of substantial differences. Even the slightest difference in file formats often creates an incompatibility, because computers are exact machines. However, the law of patent infringement is not so limiting. A patent claim may be infringed if an element of the infringing device is only substantially the same as a limitation of the patent claim. Warner-Jenkinson, 520 U.S. at 29. Indeed, we have upheld determinations of equivalence on the ground that hardware and software implementations of a component of an invention are interchangeable substitutes, Overhead Door Corp. v. Chamberlain Group, Inc., 194 F.3d 1261, 1269-70, 52 USPQ2d 1321, 1326 (Fed. Cir. 1999), even though such a substitution would require ancillary changes in affected circuitry and packaging. Rather than focusing on physical or electronic compatibility, the known interchangeability test looks to the knowledge of a skilled artisan to see whether that artisan would contemplate the interchange as a design choice. Id. Viewed in that light, Birdwell's testimony that the

claimed digital fisheye image and SmoothMove's® equirectangular panorama file are "interchangeable alternatives" is substantial evidence supporting equivalence.

Secondly, we reject Infinite's function-way-result argument because the ability to transform moving images in real time relative to the motion is not part of either the function, way, or result of the "image transform processor means." As a preliminary matter, we consider the entire "image transform processor means" with its two associated functions to be one limitation. We do so because the two functions are accomplished by the same structure and are closely related. In fact, the first function, "processing said digitized signals in said input image memory means according to selected viewing angles and magnification," and the second function, "producing output transform calculation signals according to a combination of said digitized signals, said selected viewing angles and said selected magnification," are practically inseparable. Having identified the functions in the claim language itself, Lockheed Martin Corp. v. Space Sys./Loral, Inc., 249 F.3d 1314, 1324, 58 USPQ2d 1671, 1678 (Fed. Cir. 2001), we look to the way in which those functions are accomplished and the attendant results in the specification. In this case, the specification discloses particular transform equations, '667 patent, ll. 30-54 (equations (17) and (18)), implemented in a pair of "X-map and Y-map transform processors," which are "application specific integrated circuits or other means as may be known to persons skilled in the art," id. at col. 4, ll. 1-5. The results achieved by those functions are not limited to real time capabilities relative to movement in the image. Instead, as the applicant's remarks to the Examiner indicated, the results include real time capabilities relative to user input of viewing angle and magnification. Accordingly,

Infinite's argument in terms of the function-way-result test misses the mark.

Thus, Infinite's arguments do not reveal any flaw underlying the jury's finding of equivalence so serious as to indicate that the jury's finding is unsupported by substantial evidence. Essentially, Infinite invites us to reweigh the evidence of substantial similarity in its favor. We cannot accept that invitation. Nutrinova Nutrition Specialties & Food Ingredients GmbH v. Int'l Trade Comm'n, 224 F.3d 1356, 1359, 55 USPQ2d 1951, 1953 (Fed. Cir. 2000). We therefore affirm the district court's denial of Infinite's post-trial motion for JMOL on the issue of equivalence in fact.

C. Damages

Because we affirm the jury's verdict of infringement, we turn next to the jury's award of damages. Interactive's theory of damages was based on a reasonable royalty that the parties might have agreed to during a hypothetical negotiation when infringement began in 1996. Interactive's damages expert, Dr. Donald L. Martin, testified that the reasonable royalty would have been fully paid-up, covering a term of five years, at a rate of 10% of gross revenue. Martin presented two figures — an upper range and a lower range. They differed only in the royalty base. The upper range, $3.2 million, assumed sales increasing from $0.9 million in 1997 to $53 million in 2001, according to a five-year annual projection of total sales stated in an Infinite business plan prepared in 1996. The lower range, $1 million, assumed sales of $4 million in 1997, a figure also taken from the 1996 business plan, with annual increases at the rate of 2.68%, the average rate of growth in the economy over the last 20 years. The jury presumably accepted Martin's lower range. In

both cases, Martin asserted as the royalty base a projection of Infinite's total future sales.

Infinite first challenges the royalty base asserted by Interactive. Infinite argues that the royalty base was flawed because (1) Martin's projection of Infinite's future sales was speculative, as it was based on an outdated business plan and its optimistic assumptions of future revenue growth; and (2) Martin erroneously included sales of all of Infinite products, rather than just infringing products. Secondly, Infinite argues that the jury's award was tainted by testimony that Infinite's infringement caused a decrease in Interactive's stock price. Interactive defends the royalty base by responding that the 1996 business plan, dated two months before infringement began, was the best information at the time for a hypothetical negotiation and that Infinite's bundling and convoyed sales justified its inclusion of all Infinite products in the royalty base. Interactive also responds that Infinite failed to object to the testimony regarding its stock devaluation and that the jury was properly instructed to award damages on the basis of a reasonable royalty and not to award damages based on speculation or conjecture.

We agree with Interactive that Martin's testimony was not speculative by virtue of its reliance on Infinite's 1996 business plan. We have previously upheld awards of damages premised on a lump sum royalty payment based on an infringer's expected sales. E.g., Snellman v. Ricoh Co., 862 F.2d 283, 289, 8 USPQ2d 1996, 2001 (Fed. Cir. 1988). We have also endorsed the conceptual framework of a hypothetical negotiation between the patentee and the infringer as a means for determining a reasonable royalty. Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1554, 35 USPQ2d 1065, 1076-77 (Fed. Cir. 1995) (en banc). When that framework is employed, the negotiation

must be hypothesized as of the time infringement began. Wang Labs., Inc. v. Toshiba Corp., 993 F.2d 858, 869-70, 26 USPQ2d 1767, 1777-78 (Fed. Cir. 1993). Although "a trier of fact must have some factual basis for a determination of a reasonable royalty," consideration of a hypothetical negotiation "necessarily involves an element of approximation and uncertainty." Unisplay, S.A. v. Am. Elec. Sign Co., 69 F.3d 512, 517, 36 USPQ2d 1540, 1544 (Fed. Cir. 1995). In this case, the 1996 business plan and its projections for future sales were prepared by Infinite two months before infringement began. Thus, rather than being outdated for purposes of the hypothetical negotiation, those projections would have been available to Infinite at the time of the hypothetical negotiation. The fact that Infinite did not subsequently meet those projections is irrelevant to Infinite's state of mind at the time of the hypothetical negotiation. Nor does Infinite's subsequent failure to meet its projections imply that they were grossly excessive or based only on speculation and guesswork. Instead, Infinite's subsequent failure to meet its projections may simply illustrate the "element of approximation and uncertainty" inherent in future projections. Id. Because Martin's use of the sales projections from the 1996 business plan was supported by evidence, not grossly excessive, nor based only on speculation and guesswork, we will not the disturb the jury's damage award on that basis.

Interactive argues that Lindemann Maschinenfabrik GmbH v. Am. Hoist & Derrick Co., 895 F.2d 1403, 13 USPQ2d 1871 (Fed. Cir. 1990), compels a contrary result. We disagree. In that case we affirmed a district court's award of damages in derogation of the patentee's expert's testimony, which was based on estimates of the infringer's anticipated profits "that bore no relation to actual profits." Id. at 1407, 13 USPQ2d at 1875. Lindemann therefore

supports the proposition that an actual infringer's profit margin can be relevant to the determination of a royalty rate in a hypothetical negotiation. Id. at 1407-08, 13 USPQ2d at 1875 (citing Trans-World Mfg. Co. v. Al Nyman & Sons, Inc., 750 F.2d 1552, 1568, 224 USPQ 259, 269 (Fed. Cir. 1984)). However, Lindemann does not require that estimates of sales revenues, as referenced in a hypothetical negotiation at the time infringement began, must later bear a close relation to actual sales revenue. Such a proposition would essentially eviscerate the rule that recognizes sales expectations at the time when infringement begins as a basis for a royalty base as opposed to an after-the-fact counting of actual sales.

We also conclude that Martin permissibly included all Infinite products in the royalty base, and that Martin did not provide for an unfair double recovery by factoring the bundling and convoying sales into the royalty rate. The jury was entitled to rely on evidence of bundling and convoyed sales in determining the proper scope of the royalty base. Deere & Co. v. Int'l Harvester Co., 710 F.2d 1551, 1559, 218 USPQ 481, 487 (Fed. Cir. 1983) (authorizing such an approach as "eminently reasonable"); cf. Rite-Hite, 56 F.3d at 1548-49, 35 USPQ2d at 1072 (allowing recovery of lost profits from the patentee's unpatented components that compete directly with the infringing device and function together with the patented device). The fact that bundling and convoyed sales affected Martin's estimate of both the royalty base and the royalty rate is thus not a sufficient reason to nullify the jury's award. The "extent of . . . derivative or convoyed sales" is one of the often-cited Georgia-Pacific factors relevant to a determination of a reasonable royalty rate. Georgia-Pacific Corp. v. U.S. Plywood Corp., 318 F. Supp. 1116, 1120, 166 USPQ 235, 238 (S.D.N.Y. 1970); see also State Indus., Inc. v. Mor-Flo Indus.,

Inc., 883 F.2d 1573, 1580-81, 12 USPQ2d 1026, 1031 (Fed. Cir. 1989) ("The value of collateral sales could also be factored into the royalty rate.") (citations omitted). Martin explained the application of that factor to the royalty rate in this case. Yet, the bundling and convoyed sales were just one of thirteen Georgia-Pacific factors used by Martin to justify a royalty rate of 10%. Even if we were to ignore the bundling and convoyed sales as a factor, the other twelve Georgia-Pacific factors provide ample evidentiary support for the resulting royalty rate, and we conclude that Martin's opinion, in its entirety, was not so excessive, speculative, the product of guesswork, or devoid of evidentiary support to warrant upsetting the jury's award.

We will also not reverse the jury's award of damages based on the testimony regarding stock devaluation in this case. Interactive's CFO testified that the market value of the company dropped $14 million in 1997, apparently due to Infinite's infringement. While it is true that a decrease in a company's stock value is generally too remotely related to patent infringement to be compensable under the patent laws, Rite-Hite, 56 F.3d at 1546, 35 USPQ2d at 1069, it is not clear that the testimony tainted the jury in this case. Rather, the jury award appears to have been based solely on Martin's lower range estimate of a reasonable royalty.

We have considered Infinite's other arguments on the issue of damages and find them to be without merit. Because substantial evidence supports the jury's award of damages, we conclude that the district judge did not abuse his discretion in denying Infinite's motion for remittitur or a new trial.

CONCLUSION

Because infringement by equivalents was not precluded as a matter of law and the jury's verdict of infringement and award of damages were supported by substantial evidence, we

AFFIRM.

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE

Case No. 3:96-CV-849

INTERACTIVE PICTURES CORPORATION, fka OMNIVIEW, INC.,

Plaintiff,

v.

INFINITE PICTURES, INC., and BILL TILLMAN, GARY WALTENBAUGH, and CRAIG JONES, dba GRAPHIC EFFECTS, aka GRAPHIC EFX,

Defendants,

AMENDED JUDGMENT IN A CIVIL CASE

[] Jury Verdict. This action came before the Court for a trial by jury. The issues have been tried and the jury has rendered its verdict.

[X] Decision by Court,

IT IS ORDERED AND ADJUDGED that Infinite Pictures' renewed motion for judgment as a matter of law, or in the alternative, for a new trial, is hereby **DENIED** in all respects. IPIX's motion to amend the final judgment [doc. 212] is **GRANTED** in respect to the identity of the parties or entities bound by injunction, otherwise, the motion is **DENIED.**

Judgment is entered in favor of plaintiff IPIX and against defendant Infinite Pictures and defendant Bill Tillman d/b/a Graphic Efx in this action in the

sum of One Million Dollars ($1,000,000.00) plus interest on that amount from August 1, 1996, at the judgment rate prescribed by 28 USC §1961 as of the date of entry of this judgment (4.732% annually), until paid in full. As of March 31, 1999 this amount totaled One Million One Hundred Thirty-One Thousand Two Hundred Ninety-Two and 46/100ths ($1,131,292.46). From and after March 31, 1999, and until August 1, 1999, the daily interest on said amount shall be One Hundred Forty-Two and 20/100ths Dollars ($142.20), at which time the amount shall be compounded as prescribed by 28 USC §1961(b). The liability of Infinite Pictures and Graphic Efx for satisfaction of this judgment is and shall be joint and several.

Defendants Infinite Pictures and Graphic Efx, their officers, agents, servants employee and attorneys, and those in active concert or participation with them who receive actual notice or the order by personal service or otherwise are hereby restrained and permanently enjoined from infringing the '667 patent.

Infinite Pictures shall bear all costs incurred by IPIX in this litigation.

Date: September 25, 2000

Patricia L. McNutt,
Clerk

/s/D. Crumpton
Deputy Clerk

Date: 9-25-00
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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE
AT KNOXVILLE

Case No. 3:96-CV-849

INTERACTIVE PICTURES CORPORATION,
f/k/a OMNIVIEW, INC.,

Plaintiff,

v.

INFINITE PICTURES, INC., et al

Defendants,

MEMORANDUM AND ORDER

This civil action is before the court for consideration of three motions that have been filed post trial [docs. 213, 216 & 220]. After a lengthy trial, the jury found in favor of plaintiff in this patent infringement case and awarded plaintiff damages in the amount of $1,000,000. A final judgment was entered [doc. 211]. Defendant, Infinite Pictures, Inc. ("Infinite Pictures") , has filed renewed motion for judgment as a matter of law, or in the alternative, for a new trial [doc. 216] and a motion for stay of proceedings to enforce judgment pending consideration of its motion for judgment as a matter of law [doc. 213]. Plaintiff, Interactive Pictures Corporation, fka Ominiview, Inc. ("IPIX"), has filed a motion to amend the final judgment [doc. 220]. The court will first address the motion for judgment as a matter of law ("JMOL") filed by Infinite Pictures.

Infinite Pictures' JMOL motion renews issues raised in its pretrial motions for summary judgment, its motions for judgment that were presented after presentation of plaintiff's proof and renewed at the close of all evidence, and its motions for judgment on issues reserved to the court. Infinite Pictures is seeking relief from the jury's verdict of infringement by asking for a judgment as a matter of law that its accused SmoothMove software does not infringe U.S. Patent No. 5,185,667 (the "667 patent") under the doctrine of equivalents. Alternatively, Infinite Pictures seeks a new trial on the issue of infringement. Infinite Pictures also seeks a judgment as a matter of law that the claims of the '667 patent are invalid under 35 U.S.C. §112. Should the court uphold the jury's verdicts on infringement and validity, Infinite Pictures alternatively asks that the damage award of $1,000,000 be set aside in favor of a remittitur. Should the remittitur be refused by IPIX, Infinite Pictures seeks a new trial on the issue of damages. The court heard oral argument on this motion [doc. 241].

A JMOL is appropriate when "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed. R. Civ. P. 50(a)(1). "A district court may overturn a jury's verdict on a motion for JMOL, only if, upon the record before the jury, reasonable persons could not reach the verdict returned by that jury." *Union Oil Co. of California v. Atlantic Richfield Co.*, 208 F.3d 989,994 (Fed. Cir. 2000). The party seeking a JMOL must demonstrate that the jury's findings "are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied from the jury's verdict cannot in law be supported by those findings." *Celeritas Technologies, Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1358 (Fed. Cir. 1998).

Relying on *Chiuminatta Concrete Concepts v. Cardinal Industries, Inc.*, 145 F.3d 1303 (Fed. Cir. 1998), Infinite Pictures contends that the jury's verdict of infringement under the doctrine of equivalents should be overturned as a matter of law. Infinite Pictures' position is that *Chiuminatta* reflects the current and correct standard for analysis of infringement under 35 U.S.C. §112(6) and the doctrine of equivalents. Infinite Pictures argues that a finding of nonequivalence under 35 U.S.C. §112(6) generally precludes a finding of equivalents unless the equivalence issue concerns after-arising technology. It notes that the Federal Circuit in *Chiuminatta* instructed that the doctrine of equivalents does not cover a structure which was known when the patent was granted and which could have been disclosed in the patent but was not. Thus, Infinite Pictures concludes that because IPIX admitted the SmoothMove software does not literally contain the image transform process means and it is undisputed that the accused technology was known and available when the '667 patent was granted, as a matter of law, IPIX's contention of infringement under the doctrine of equivalents must fail.

IPIX contends tht the Federal Circuit's opinion in *Odetics, Inc. v. Storage Technology Corp.*, 185 F.3d 1259 (Fed. Cir. 1999) makes clear that Infinite Pictures' reading of *Chiuminatta* and its analysis based on that reading is incorrect. IPIX relies *inter alia* on language in *Odetics* in which the Federal Circuit stated that "*Chiuminatta*" did not mark a change in the proper infringement analysis under §112(6)." The Court in *Odetics* reversed the district court's grant of a JMOL which had been based on the analysis in *Chiuminatta* and reinstated the jury's verdict which was supported by substantial evidence. *Odetics*, 185 F.3d at 1263. IPIX argues that in doing

so, the Court in *Odetics* gave no significance to the fact that the equivalent structure at issue predated the patent in suit which is the basis for Infinite Pictures' motion.

IPIX further argues that the case herein presents a different situation than that in *Chiuminatta* in which the asserted equivalent structure performed the identical function as that recited in the claims. IPIX maintains that the question in *Chiuminatta* was whether that function was performed in substantially the same way achieving the same result, and there was no literal infringement under §112(6) since the accused device operated in a substantially different way. IPIX contends that the inference from the jury's verdict in this case is that the jury found the infringing SmoothMove software performs substantially the same function in substantially the same way, and achieves substantially the same results as in the claims.

IPIX also contends that the decision in *WMS Gaming, Inc. v. International Game Technology*, 184 F.3d 1339 (Fed. Cir. 1999) enhances its position. IPIX points out that the Federal Circuit reversed the district court's holding of literal infringement based on a lack of identity of function and concluded that the accused device could still infringe under the doctrine of equivalents, unlike in *Chiuminatta*. Thus, IPIX argues that the Court in *WMS Gaming* made it clear that an accused device may infringe under the doctrine of equivalents without there being literal infringement under §112(6). Infinite Pictures, however, argues that IPIX cannot take advantage of the suggestion in *WMS Gaming* that a finding of no literal infringement under §112(6), that is based on a lack of identity of function, instead of the lack of equivalent structure, permits avoidance of the rule in *Chiuminatta*. Infinite Pictures supports this position

by pointing out that IPIX did not make such a distinction when it abandoned its claim of literal infringement, recognizing that the SmoothMove product does not meet the image transform processor means of the asserted claims and that it did not make such distinction when it opposed Infinite Pictures' request for summary adjudication of noninfringement.

In addition to contending that it is entitled to a judgment of noninfringement as a matter of law, Infinite Pictures maintains that there is a lack of sufficient evidence that the claimed invention and the accused SmoothMove software are substantially equivalent and, therefore, the verdict cannot stand. Infinite Pictures argues that IPIX failed to present at trial substantial evidence to demonstrate that Infinite Pictures' software is the substantial equivalent of the "image transform processor means" in the '667 patent.

IPIX argues, however, that the issue of technological equivalence was properly before the jury and that the evidence at trial was overwhelming and demonstrated that the differences between the claimed invention and the accused SmoothMove software are insubstantial only. IPIX points to the documentary and testimonial evidence of equivalence it introduced at trial including the testimony and opinions of its expert, Dr. Douglas Birdwell.

After due consideration of Infinite Pictures motion as it pertains to the grant of a JMOL, the court concludes that it is not well taken and a JMOL is not called for in this case. The court is mindful of the standard which must be met in order to grant a JMOL, and it does not believe that standard has been met here. The court has considered the arguments by counsel but does not believe that the law requires or compels it to overturn the jury's finding of infringement under the doctrine of equivalents as a

matter of law. Further, the record reflects that the jury had before it ample substantial evidence to find as it did, and there is no reason to overturn the jury's finding on that basis.

However, Infinite Pictures also moves alternatively for a new trial on the issue of infringement under the doctrine of equivalents and also for a remittitur or new trial on the issue of damages. Federal Rule of Civil Procedure 59(a) provides that a "new trial may be granted to ...any of the parties...in an action in which there has been a trial by a jury, for any of the reasons for which new trials have heretofore been granted in actions at law in courts of the United States." Fed.R.Civ.P. 59(a). The court must determine "whether, in the conduct of the trial, an error occurred that was so egregious as to render the trial unfair." *Advanced Display Systems, Inc. v. Kent State University*, 212 F.3d 1272, 1284 (Fed. Cir. 2000) (citing *DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 427 (Fed.Cir. 1986). The court has considered Infinite Pictures' request in view of this standard and the record herein and finds no reason for granting a new trial on the issue of infringement under the doctrine of equivalents.

The court also concludes that there is no reason for a remittitur or new trial on the issue of damages. A remittitur is within the discretion of the court. *See Smith v. John Swafford Furniture Co.*, 614 F.2d 552 (6th Cir. 1980); *Manning v. Altec, Inc.*, 488 F.2d 127 (6th Cir. 1973). Infinite Pictures argues *inter alia* that the evidence presented by IPIX on the issue of damages was based on speculative expert testimony and unsupported allegations of decreased stock value and sales that were never lost. However, the court has carefully considered this issue and finds that there is no basis for a remittitur or new trial on the issue of damages. The jury's award of damages is well

supported by sufficient evidence and represents adequate compensation to IPIX.

Infinite Pictures also seeks in its motion a JMOL on the is due of invalidity and relies on its prior briefing, presenting no new or additional argument here. The court has already ruled on this issue and finds no basis to alter or reverse its prior ruling [doc. 208].

Accordingly, Infinite Pictures' renewed motion for judgment as a matter of law, or in the alternative, for a new trial, is hereby **DENIED** in all respects.

In addition, Infinite Pictures' motion for stay of proceedings to enforce judgment [doc. 213] is hereby **DENIED AS MOOT.**

IPIX has filed a motion to amend the June 16, 1999 final judgment [doc.220]. In its motion IPIX seeks to have expressly identified in the judgment those who are bound by the injunction and also seeks to clarify the scope of the injunction. Infinite Pictures does not contest IPIX's request to clarify the identity of the parties or entities bound by the injunction pursuant to Fed.R.Civ.P. 65(d) [doc. 221]. Therefore, this portion of IPIX's motion to amend the final judgment is **GRANTED.**

The following language shall be inserted in the final judgment [doc. 211] at page 3, line 1 of paragraph 4, after "Graphic Efx":

--, their officers, agents, servants,
employees and attorneys, and
those in active concert or participation
with them who receive actual notice
of the order by personal service or
otherwise, --

IPIX also seeks to amend the final judgment by modifying the languge in subpart b of paragraph 5, in particular the current reference to "hemispherical fisheye lens cameras." IPIX is concerned that this language is subject to being construed in an unduly restrictive manner and argues that its invention encompasses fisheye lenses which might not be considered "hemispherical" lenses but which provide a hemispherical image field of view; thus, the injunction should not be limited to exclude fisheye lenses. Therefore, IPIX contends that the proposed modification clarifies the scope of the injunction and is consistent with the mandate of Fed.R.Civ.P. 65(d) and the scope of the '667 patent.

Infinite Pictures responds by contending *inter alia* that IPIX is in essence presenting a hypothetical question that requires an advisory opinion from the court; that IPIX wants to extend the injunction to cover not only the hemispherical (180 degree) fisheye lens at issue in this case but also other lens types as the known 220 degree lenses capable of providing a hemispherical view not at issue in this case; that the only product in suit, the SmoothMove software, used a hemispherical fisheye lens; and that IPIX's proposed amendment is tantamount to a claim for injunctive relief concerning a product whose infringement has not been adjudicated and in fact does not exist.

After due and careful consideration, the court concludes that the amendment to the final judgment proposed by IPIX is not called for. The court made its determination concerning the scope and defining boundaries of the injunction when it considered the proposed judgment forms submitted by the parties and then entered the final judgment. The court finds no reason to alter that determination now.

Accordingly, plaintiff's motion to amend the June 16, 1999 final judgment [doc. 220] is hereby **DENIED.**

IT IS SO ORDERED.

ENTER:

/s/Leon Jordan
Leon Jordan
United States District
Judge

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE

Case No. 3:96-CV-849

INTERACTIVE PICTURES CORPORATION, fka OMNIVIEW, INC.,

Plaintiff,

v.

INFINITE PICTURES, INC., and BILL TILLMAN, GARY WALTENBAUGH, and CRAIG JONES, dba GRAPHIC EFFECTS, aka GRAPHIC EFX,

Defendants,

JUDGMENT IN A CIVIL CASE

[X] Jury Verdict. This action came before the Court for a trial by jury. The issues have been tried and the jury has rendered its verdict.

[] Decision by Court, This action came to trial or hearing before the Court. The issues have been tried or heard and a decision has been rendered.

IT IS ORDERED AND ADJUDGED that judgment is entered in favor of plaintiff IPIX and against defendant Infinite Pictures and defendant Bill Tillman d/b/a Graphic Efx in this action in the sum of One Million Dollars ($1,000,000.00) plus interest on that amount from August 1, 1996, at the judgment rate prescribed by 28 USC 1961 as of the date of entry of this judgment (4.732% annually), until paid in full. As of March 31, 1999 this amount totaled One Million

One Hundred Thirty-One Thousand Two Hundred Ninety-Two and 46/100ths ($1,131,292.46). From and after March 31, 1999, and until August 1, 1999, the daily interest on said amount shall be One Hundred Forty-Two and 20/100ths Dollars ($142.20), at which time the amount shall be compounded as prescribed by 28 USC 1961(b). The liability of Infinite Pictures and Graphic Efx for satisfaction of this judgment is and shall be joint and several.

Defendants Infinite Pictures and Graphic Efx are hereby restrained and permanently enjoined from infringing the '667 patent.

Infinite Pictures shall bear all costs incurred by IPIX in this litigation.

Date: June 16, 1999

R. Murray Hawkins
Clerk

/s/D. Crumpton
Deputy Clerk

Date: _____
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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE
NORTHERN DIVISION, AT KNOXVILLE

Case No. 3:96-CV-849

INTERACTIVE PICTURES CORPORATION, fka OMNIVIEW, INC.,

Plaintiff,

v.

INFINITE PICTURES, INC., and BILL TILLMAN, GARY WALTENBAUGH, and CRAIG JONES, dba GRAPHIC EFFECTS, aka GRAPHIC EFX,

Defendants.

FINAL JUDGMENT

This civil action having been tried before this Court with a jury on January 5-9 and 12-14, 1998, and on February 2-6 and 9-10, 1998, and the jury having found in favor of the plaintiff, Interactive Pictures Corporation, f/k/a Omniview, Inc. ("IPIX"), and against the defendant Infinite Pictures, Inc. ("Infinite Pictures"), and awarded plaintiff damages against this defendant in the amount of $1,000,000, and the defendant Bill Tillman d/b/a Graphic Efx, a/k/a Graphic Effects("Graphic Efx") having failed to appear for trial and being in default, it is hereby

ORDERED, ADJUDGED AND DECREED that:

1. IPIX is the owner of all right, title and interest in and to United States Patent No. 5,185,667 (the '667

patent). None of the claims of the '667 patent has been found invalid or unenforceable.

2. Defendants have infringed the '667 patent under the doctrine of equivalents by manufacturing, using, offering for sale and selling the combination of Infinite Pictures' Smoothmove Photo Seamer and Infinite Pictures' Viewer software for use in the United States for use on images taken with a hemispherical fisheye lens, through the selective perspective correction and viewing of portions of the hemispherical image.

3. Judgment is entered in favor of plaintiff IPIX and against defendant Infinite Pictures and defendant in default Bill Tillman d/b/a/ Graphic Efx in this action in the sum of One Million Dollars ($1,000,000) plus interest on that amount from August 1, 1996, at the judgment rate prescribed by 28 USC 1961 as of the date of entry of this judgment (4.732% annually), until paid in full. As of March 31, 1999 this amount totaled One Million One Hundred Thirty-One Thousand Two Hundred Ninety-Two and 46/100ths ($1,131,292.46). From and after March 31, 1999, and until August 1, 1999, the daily interest on said amount shall be One Hundred Forty-Two and 20/100ths Dollars ($142.20), at which time the amount shall be compounded as prescribed by 28 USC 1961(b). The liability of Infinite Pictures and Graphic Efx for satisfaction of this judgment is and shall be joint and several.

4. Defendants Infinite Pictures and Graphic Efx are hereby restrained and permanently enjoined from infringing the '667 patent by making, using, distributing or selling, or offering for sale in the United States a combination of Infinite Pictures' Photo Seamer and Viewer software products or any other software products no more than colorably different

from a combination of the Photo Seamer and Viewer software products, for use in transforming fisheye photographic images and then correcting the perspective on and viewing selected portions of the resulting hemispherical images.

5. Nothing in this injunction shall preclude or prevent defendants Infinite Pictures and Graphic Efx from making, using, distributing or selling or offering for sale in the United States, any seamer or viewer software that is used in ways that do not infringe the '667 patent, including without limitation in or for any of the following applications:

a. processing or viewing computer graphics generated images;

b. processing, projecting or viewing photographic images that are not taken with hemispherical fisheye lens cameras; and

c. any use for or on behalf of the U.S. Government for which the Government has a right to a royalty-free use of the'667 patent.

6. The counterclaim of defendant/counterclaim plaintiff Infinite Pictures is hereby dismissed with prejudice.

7. Jurisdiction is retained by this Court for the purpose of enabling the parties to apply to this Court at any time for further orders or directions as may be necessary for the enforcement of or compliance with the Judgment.

8. Infinite Pictures shall bear all costs incurred by IPIX in this litigation. Pursuant to E.D. Tn. L.R. 54.1, in the absence of an agreement among counsel for the litigants, IPIX shall file and serve upon opposing

counsel its bill of costs within thirty (30) days from entry of this Final Judgment.

ENTER:

/s/Leon Jordan
Leon Jordan
United States District
Judge

(Court's Stamp: Filed June 16, 1999, U.S. District Court, Eastern Dist. Tenn., By /s/ DC, Dep. Clerk)

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

Appeal No. 01-1029

INTERACTIVE PICTURES CORPORATION
(formerly known as Omniview, Inc.)

Plaintiff-Appellee,

v.

INFINITE PICTURES, INC.,

Defendant-Appellant,

and

BILL TILLMAN, CRAIG JONES and WALTENBAUGH
(doing business as Graphic Effects, aka Graphic EFX)

Defendants.

ORDER

A combined petition for panel rehearing and for rehearing en banc having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the APPELLEE, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on March 28, 2002.

FOR THE COURT,
/s/ Jan Horbaly, Clerk

Dated: March 21, 2002

cc: Alexander C. Johnson, Jr.
Robert F. Altherr, Jr.

INTERACTIVE PICTURES V INFINITE PIC, 01-1029
(DCT - 96-CV-849)

Note: Pursuant to Fed. Cir. R. 47.6, this order is not citable as precedent. It is a public record.

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

Appeal No. 01-1029

INTERACTIVE PICTURES CORPORATION
(formerly known as Omniview, Inc.),

Plaintiff-Appellee,

v.

INFINITE PICTURES, INC.,

Defendant-Appellant,

and

BILL TILLMAN, CRAIG JONES and WALTENBAUGH
(doing business as Graphic Effects, aka Graphic EFX)

Defendants.

JUDGMENT

ON APPEAL from the UNITED STATES DISTRICT COURT EASTERN DISTRICT OF TENNESSEE

In Case NO(S). *96-CV-849*

This CAUSE having been heard and considered, it is ORDERED and ADJUDGED:

AFFIRMED

ENTERED BY ORDER OF THE COURT

DATED Dec 20 2001 */s/ Jan Horbaly, Clerk*

ISSUED AS A MANDATE: MARCH 28, 2002

28 U.S.C. §1254. - Courts of appeals; certiorari; certified questions

Cases in the courts of appeals may be reviewed by the Supreme Court by the following methods:

(1)

By writ of certiorari granted upon the petition of any party to any civil or criminal case, before or after rendition of judgment or decree;

35 U.S.C. §112. - Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all

the limitations of the particular claim in relation to which it is being considered.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof

U.S. CONST. art. I, § 8, cl. 8:

Section 8. The Congress shall have power to lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts and excises shall be uniform throughout the United States;

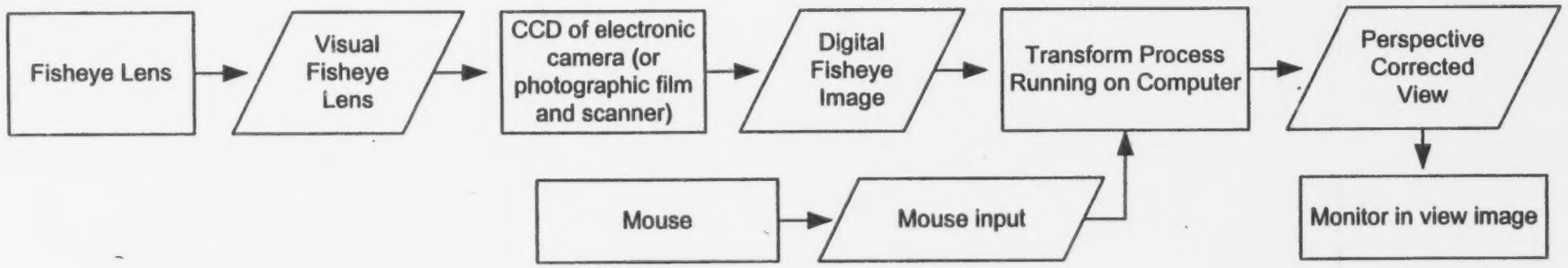
***

To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries;

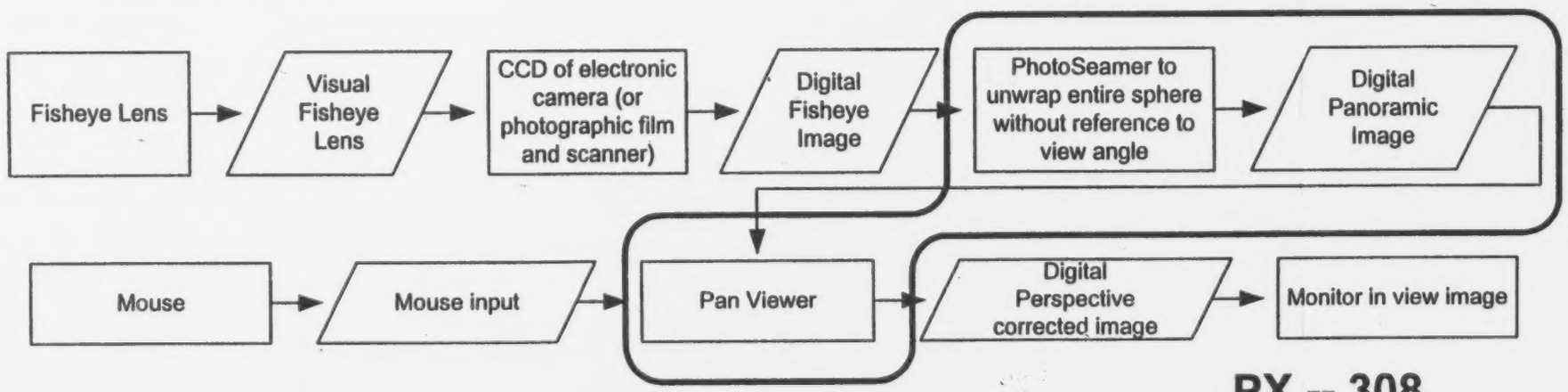
***

Infinite Pictures Infringes

OmniView's System



Infinite Picture's System



PX -- 308

Supreme Court, U.S.
FILED
AUG - 5 2002
OFFICE OF THE CLERK

(2)

No. 01-1849

IN THE
Supreme Court of the United States

INFINITE PICTURES, INC.,
Petitioner,

v.

INTERACTIVE PICTURES CORPORATION,
F/K/A OMNIVIEW, INC.,
Respondent.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI

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August 5, 2002

PRESS OF BYRON S. ADAMS ✦ WASHINGTON, D.C. ✦ 1-800-347-8208

QUESTION PRESENTED

Respondent's patent covers a revolutionary and commercially successful system for transforming a distorted "fisheye" image into a perspective corrected view. A jury found Petitioner liable, under the doctrine of equivalents, for infringing Respondent's patent. Petitioner challenged the jury's verdict on numerous grounds, but the District Court denied Petitioner's challenges. Petitioner then appealed the judgment to the Court of Appeals for the Federal Circuit, which unanimously affirmed the jury's verdict, finding substantial evidence to support the infringement findings.

After the Federal Circuit's decision, Petitioner filed a petition for rehearing *en banc*, arguing for the first time in its rehearing petition that the doctrine of equivalents cannot, as a matter of law, be applied to any claim element written in accordance with 35 U.S.C. § 112, sixth paragraph ("means-plus-function" form). The Federal Circuit declined to entertain this new argument, which had never before been presented, and denied Petitioner's rehearing petition. Petitioner now asks this Court to rule in the first instance on its new argument. The question presented by the petition, therefore, is:

Whether this Court should entertain a new issue presented for the first time in a petition for rehearing in the Federal Circuit and, even if the issue were to be considered, whether this Court's precedents foreclose Petitioner's arguments?

CORPORATE DISCLOSURE STATEMENT

There are no parent corporations of Respondent and there are no publicly held companies that own 10% or more of the stock in Respondent.

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BRIEF IN OPPOSITION

The Federal Circuit concluded that the jury's infringement findings were supported by substantial evidence, and that prosecution history estoppel did not bar Respondent from asserting infringement under the doctrine of equivalents. Although Petitioner relied heavily in the Federal Circuit on that court's recently vacated decision in *Festo Corp. v. Shoketsu Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000) (*en banc*), *vacated by* 122 S. Ct. 1831 (2002), Petitioner has now switched horses and directly attacks the availability of the doctrine of equivalents for claim limitations written in what it calls "functional" language. This Court should decline to entertain this newly raised argument. Even were the Court to consider this new issue, Petitioner's argument has already been foreclosed by this Court's decision in *Warner-Jenkinson Co. v Hilton Davis Chemical Co.*, 520 U.S. 17 (1997). Consequently, the petition raises no important new issues and it should be denied.

STATEMENT OF THE CASE

A. The Patent

Respondent's patented invention provides an image viewing system that allows a user to interactively view a photographic image within a hemispherical (180-degree) field of view on a computer screen. The invention provides the electronic equivalent of a mechanical pan, tilt, magnification, and rotation camera viewing system with no moving parts. The system includes a camera and a fisheye lens that captures a hemispherical field of view, which is round and distorted.

According to the patented invention, a user can change the viewing angle and magnification without physically moving the camera or lens. This is made possible by digitizing the image and storing the image in a memory. An image processing system transforms the digitized image signals to remove distortion from a portion of the image, producing a perspective corrected view of the selected region. Output signals corresponding to the transformed image are stored in a second memory for viewing on a display device.

At the time the patent was filed, various formats, including an equirectangular format, were known in the art for digitally representing and storing spherical image data in a memory. Nothing in the patent or the prosecution history limited the claimed invention to a particular image storage format.

B. The District Court Proceedings

A jury trial was held on the question of infringement. The jury heard evidence showing how Petitioner's SmoothMove Panorama Web Builder software was used in combination with a camera and a fisheye lens to permit interactive viewing of photographic images. The accused software transformed distorted photographic images taken with a fisheye lens into perspective corrected images based on user inputs. Petitioner's system was slightly different from the patented invention because, instead of transforming the digitized signals, it first converted the signals into an equirectangular format before it transformed the equirectangular format into the perspective corrected images.

The asserted patent claim recites the transformation function as part of a "means-plus-function" limitation, requiring an "image transform processor means" that operates on digitized image signals and corresponds to structures described in the patent. Because Petitioner's system processed signals in an equirectangular format, that system did not perform the identical function of "processing said digitized [fisheye] signals" as required by the claim. Respondent asserted that Petitioner's system performed this function equivalently, since the mere substitution of a different image format for storing the signals constituted an insubstantial change from the claimed function.

The jury concluded that Petitioner's system infringed under the doctrine of equivalents and awarded $1 million in patent infringement damages. Petitioner challenged the jury's verdict on numerous grounds, including attacks on the sufficiency of the evidence and arguments that Respondents were precluded under the doctrine of prosecution history estoppel from asserting any equivalence. The District Court denied Petitioner's motions and entered judgment for Respondent.

C. The Federal Circuit's Decision

The Federal Circuit unanimously affirmed the decision of the District Court, concluding that prosecution history estoppel did not apply because the minor amendment made to the claim was not a narrowing amendment under the rationale of *Festo*. The Federal Circuit also rejected Petitioner's arguments that (1) equivalence was foreclosed by the prior art; (2) equivalence was precluded under the holding of that court's decision in *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus.*, 145 F.3d 1303 (Fed. Cir.

1998); and (3) the evidence regarding equivalence was insufficient to show infringement. Petition at App. 17a-25a.

After the Federal Circuit's decision, Petitioner filed a petition for rehearing *en banc* in which it directly attacked the availability of the doctrine of equivalents for any claim element written in means-plus-function form. In contrast to its prior arguments to the Federal Circuit, which were based primarily on *Festo*-type estoppel, Petitioner for the first time cited and heavily relied on this Court's now-overruled decision in *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946) in support of its new argument. The Federal Circuit denied the petition for rehearing.

REASONS FOR DENYING THE PETITION

Petitioner has raised a multitude of issues in its petition, at least two of which were never before raised in the Federal Circuit and therefore could not have been addressed by that court. Even were this Court to consider those new issues, Petitioner's arguments have already been foreclosed by this Court's established decisions.

A. This Court Should Decline to Entertain Petitioner's New Arguments

Petitioner's opening argument – that the doctrine of equivalents cannot be applied to claim elements written in "functional" form – was never presented in the Federal Circuit until Petitioner filed its petition for rehearing *en banc*. In accordance with established practice, the Federal Circuit declined to entertain that new issue. *See Pentax Corp. v. Robinson*, 135 F.3d 760, 762 (Fed. Cir. 1998) ("Just as this court will not address issues raised for the first time

on appeal or issues not presented on appeal, we decline to address the government's new theory raised for the first time in its petition for rehearing."); *Singleton v. Wulff*, 428 U.S. 106, 120 (1976) ("It is the general rule, of course, that a federal appellate court does not consider an issue not passed upon below.").

Respondent has attached at appendix pages 1a to 4a hereto the complete table of contents from Petitioner's opening brief in the Federal Circuit, showing that no such argument was presented in its brief. Having never had an opportunity to rule on that issue in the first instance, the Federal Circuit cannot be faulted for failing to adopt Petitioner's new argument.

Petitioner also raises the new argument that "[t]he district court used an expansive claim construction, made without regard to the construction procedure mandated by § 112(6). This construction permitted a finding of infringement . . . ." Petition at p. 6 (citing "error in claim construction" and allegedly erroneous jury instruction). Petitioner's attack on the District Court's claim construction and the jury instruction also were never before presented to the Federal Circuit and could not have been addressed in its opinion. In any event, contrary to Petitioner's new assertion, the District Court correctly instructed the jury regarding how to interpret the means-plus-function limitation according to the statute. App. 5a-25a

This Court has adopted a general rule against hearing issues not decided upon by the court below. *EEOC v. FLRA*, 476 U.S. 19, 24 (1986). This rule is a prudential rule that can be followed by the Court at its discretion. See 19 James Wm. Moore et al., Moore's Federal Practice § 205.05, at

205-57 to 205-58 (3d ed. 1997). The Court has chosen to waive this rule only in "exceptional cases or particular circumstances . . . where injustice might otherwise result." *Hormel v. Helvering*, 312 U.S. 552, 557 (1941). Although the Court has carved out exceptions to this general rule over the years, Petitioner's situation does not fall within any of those narrow exceptions.

For example, this Court has held that a conflict-of-interest issue regarding an attorney involved in a particular case could not realistically have been raised by the attorney whose conflict was under challenge. *Wood v. Georgia*, 450 U.S. 261, 265 n.5 (1981). In another case, an issue was first raised before this Court, but neither party objected. Because both parties supported hearing the issue, and because the issue was closely related to other main questions in the case, the Court found no reason to deny hearing an issue not heard in the lower courts. *Carlson v. Green*, 446 U.S. 14, 17 n.2 (1980).

Petitioner's situation, however, does not present similar circumstances. Unlike *Carlson*, Respondent objects to raising the new issues for the first time in this Court. Unlike *Wood*, where the Petitioner could not have raised the issue in the lower court, Petitioner in this case could have easily raised these issues before the Federal Circuit but did not do so. The focus of Petitioner's appeal to the Federal Circuit was *Festo*-created estoppel. In light of this Court's vacation of *Festo*, Petitioner has apparently switched horses and taken a different tack in this Court.

The facts and procedural history in this case more closely follow numerous other cases in which a petitioner, without explanation, failed to present an issue before the

Court of Appeals, and subsequently asked this Court to hear the issue on appeal. See, e.g., *EEOC v. FLRA*, 476 U.S. 19 (1986); *Rogers v. Lodge*, 458 U.S. 613, 628 n.10 (1982); *Adickes v. Kress & Co.*, 398 U.S. 144, 147 n.2 (1970); *Lawn v. United States*, 355 U.S. 339, 362-363 n.16 (1958); *Husty v. United States*, 282 U.S. 694, 701-702 (1931). In each of those cases, this Court declined to waive its general rule. Accordingly, the Court should decline to hear Petitioner's arguments with respect to the availability of the doctrine of equivalents to means-plus-function claims and its contentions regarding allegedly erroneous claim construction.

B. Congress Did Not Intend to Displace the Doctrine of Equivalents for "Functional" Elements

Petitioner asserts that in enacting 35 U.S.C. § 112, sixth paragraph, Congress intended to displace any application of the doctrine of equivalents for claim limitations written in that form (i.e., means-plus-function form). Petitioner also refers more generally to any claims written using "functional" language, creating an unlimited and unwarranted loophole covering claims not even written in accordance with § 112, sixth paragraph. Petition at pp. 10-11 (referring to "functionally-claimed elements;" "functional claim elements;" and "functional claim language.") In support of its argument, Petitioner relies on this Court's *Halliburton* decision, which was legislatively overruled by Congress when it enacted 35 U.S.C. § 112, sixth paragraph. Petition at p. 11.

It is manifest that this Court's *Halliburton* decision, which was legislatively overruled by Congress, cannot form

the basis for overruling later court decisions, including those of this Court. Petitioner's statement that "*Halliburton* remains authority for the position that a functional claim element, unbounded by the statutory requirements of § 112(6), is invalid," Petition at p. 12, either poses a question not raised by this case – given that the claim limitation at issue was drafted according to § 112(6) and thus cannot be "unbounded" by it – or constitutes a collateral attack on the District Court's claim interpretation and jury instruction, an issue that Petitioner waived by not previously presenting it below.

In *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17 (1997), this Court specifically rejected the argument that Congress intended to displace the doctrine of equivalents when it enacted the sixth paragraph of 35 U.S.C. § 112. In that case, this Court stated that:

> Congress in 1952 could easily have responded to *Graver Tank* as it did to the *Halliburton* decision. But it did not . . . . The lengthy history of the doctrine of equivalents strongly suggests adherence to our refusal in *Graver Tank* to find that the Patent Act conflicts with that doctrine. Congress can legislate the doctrine of equivalents out of existence any time it chooses. The various policy arguments now made by both sides are thus best addressed to Congress, not this Court.

Warner-Jenkinson, 520 U.S. at 28.

Having rejected the broad argument that Congress intended to displace application of the doctrine of

equivalents when it enacted the sixth paragraph of 35 U.S.C. § 112, it follows that Petitioner's narrower argument – that Congress must have intended to displace application of that doctrine where "both forms of equivalents [§ 112(6) and doctrine of equivalents] were implicated," Petition at p. 11-12, must also be rejected. Petitioner provides no logical basis for carving out vaguely defined exceptions for "functional claim elements."

Petitioner also states on page 11 of its petition that "[c]laim construction concerns are different when dealing with functional claim language as opposed to structural claim language," and that those different concerns warrant a different result with respect to application of the doctrine of equivalents. Petitioner's argument improperly confuses policies underlying claim construction with policies underlying the doctrine of equivalents. Claim construction concerns a determination of the *literal scope* of a claim based on the claim language, the specification, and the prosecution history. On the other hand, the doctrine of equivalents permits a patent owner to cover devices that are outside the literal scope of the properly construed claims to prevent a fraud on the patent. *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 149 F.3d 1309, 1317 (Fed. Cir. 1998) ("any analysis of infringement under the doctrine of equivalents necessarily deals with subject matter that is 'beyond,' 'ignored' by, and not included in the literal scope of a claim."). Any policy difference arises from the different nature of these two doctrines, not due to the "functional" or "structural" nature of the claim language.

To the extent that Petitioner's argument refers to "functional" claim language that is not drafted in accordance with the means-plus-function requirement of § 112, sixth

paragraph, the argument concerns a hypothetical problem not posed by this case, since it is undisputed that the claim limitation at issue was drafted and interpreted under the confines of that statutory section.

C. There is No Conflict Between the Doctrine of Equivalents and 35 U.S.C. § 112, Sixth Paragraph

Petitioner argues that there is a conflict in applying the doctrine of equivalents to claim limitations drafted in means-plus-function form, since the latter provides "statutory equivalence" beyond which no further equivalance should be permitted. To the contrary, the Federal Circuit in this case explained why the doctrine of equivalents can properly be applied to a claim limitation written in means-plus-function format:

> However, when a finding of noninfringement under 35 U.S.C. § 112, paragraph 6, is premised on an absence of identical *function*, then infringement under the doctrine of equivalents is not thereby automatically precluded. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1353, 51 USPQ2d 1385, 1395 (Fed. Cir. 1999). That is because infringement under the doctrine of equivalents may be premised on the accused and the patented component having *substantially* the same function, whereas structure corresponding to the disclosed limitation in a means-plus-function clause must perform the *identical* function. *Id.*

Petition at App. 21a (emphasis in original). In other words, applying the doctrine of equivalents to a claim limitation written in means-plus-function form prevents the accused infringer from avoiding infringement by making an insubstantial change to the function, as occurred in this case. *See also, Pennwalt Corp. v. Durand-Wyland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987) (*en banc*) ("If the required function is not performed exactly in the accused device, it must be borne in mind that section 112, paragraph 6, equivalency is not involved. Section 112, paragraph 6, plays no role in determining whether an equivalent function is performed by the accused device under the doctrine of equivalents."). By its literal terms, 35 U.S.C. § 112, sixth paragraph only addresses equivalency of structure, not of function.

The distinction between equivalency in structure and equivalency in function also distinguishes Petitioner's situation from the facts of *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303 (Fed. Cir. 1998), another case heavily relied on by Petitioner in its Federal Circuit brief. In *Chiuminatta*, the Federal Circuit concluded that where equivalence was asserted solely on the basis of the structures appearing in the specification, the doctrine of equivalents could not be extended to cover structures that pre-dated the patent. That situation does not apply where the asserted equivalency concerns the recited function rather than the corresponding structures. *Accord, WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d 1339, 1353 (Fed. Cir. 1999) (distinguishing *Chiuminatta Concrete* on that basis).

Petitioner also suggests (Petition at p. 13) that there is doubt among Federal Circuit judges regarding whether the doctrine of equivalents can apply to claim elements drafted

in accordance with § 112(6). Petitioner points to "additional views" of Judges Plager and Michel as set forth in *Dawn Equipment Co. v. Kentucky Farms Inc.*, 140 F.3d 1009 (Fed. Cir. 1998). In that case, a Federal Circuit panel reversed a jury finding of infringement of a means-plus-function claim under the doctrine of equivalents. That case is readily distinguishable.

In *Dawn Equipment*, the accused device had an identical function, but a clearly different structure. The jury found infringement under the doctrine of equivalents. The panel overturned the jury verdict, noting that despite the identity in function between the claim and the accused device, the structure of the accused device was so different from the structure described in the specification that no reasonable jury could have found them to be equivalent.

Contrary to Petitioner's suggestion, neither Judge Plager nor Judge Michel questioned "whether the doctrine of equivalents can apply to § 112(6) claim elements." Judge Plager noted first that "there appears to be no genuine issue with regard to the specified functions; the accused device appears to perform the functions recited in the means-plus-function claim limitations . . . ." *Id.* at 1020. He found it disturbing and confounding that the jury did not find literal infringement but still found infringement under the doctrine of equivalents, because to do so would have meant that the jury applied two different standards for structural equivalence – a narrow one in the literal infringement determination and a broader one in the doctrine of equivalents analysis. *Id.* Judge Plager concluded by suggesting that the doctrine of equivalents should not be applied to "the 'equivalents' of 'structure, material, or acts described in the specification'" in determining infringement

of a means-plus-function claim. *Id.* at 1021-22. Nothing in Judge Plager's remarks, which were not part of the holding of the case, indicated that he believed that the doctrine of equivalents was inapplicable to a means-plus-function claim.

Petitioner alleges that Judge Michel's remarks show that he doubted the applicability of the doctrine of equivalents to means-plus-function claims. It is clear from the facts of that case, however, that Judge Michel was merely suggesting that the court should decide whether there could be an "equivalent" (under the doctrine of equivalents) of an equivalent *structure* as defined by § 112(6). *Id.* at 1022-23. Judge Michel was not suggesting that the doctrine of equivalents could not apply to equivalency of function in means-plus-function claims, but instead posed the question: Whether there could, under the statutory scheme provided by § 112(6), be an "equivalent" of an equivalent structure. Petitioner urges this Court to answer the question posed by Judge Michel; yet the issue in this case (equivalency of function, not structure) is not the one posed by Judge Michel.

Federal Circuit precedent makes clear that infringement of a means-plus-function claim under the doctrine of equivalents is appropriate. In *Pennwalt v. Durand-Wayland, Inc.*, 833 F.2d 931 (Fed. Cir. 1987) (*en banc*), the court undertook a complete doctrine of equivalents analysis with respect to the means-plus-function claim at issue. If, as Petitioner suggests, such equivalence were precluded as a matter of law, the *en banc* Federal Circuit would not have conducted such an analysis.

Petitioner's question in this case was presented to the full Federal Circuit in Petitioner's petition for rehearing *en*

banc. That court's denial of the petition, without dissent, indicates that there is no doubt on this issue.

Petitioner also suggests that application of the doctrine of equivalents in this case conflicts with the definitional and public notice function that claims are intended to serve. Petition at p. 14. Petitioner overlooks the fact that this Court addressed that perceived conflict in *Warner-Jenkinson* by recognizing that the doctrine of equivalents should be applied to the individual elements of a claim, and not merely to the claimed invention as a whole. *Warner-Jenkinson*, 520 U.S. at 29. It is also undisputed that in this case every element of the claim was *literally* present in the accused device except for the "image transform processor means," which was found to be equivalently present.

The Federal Circuit's decision is wholly consistent with *Warner-Jenkinson* and *Graver Tank & Mfg. Co. v. The Linde Air Products Co.*, 339 U.S. 605 (1950). By substituting an equirectangular panorama, a known interchangeable alternative, for the claimed digitized fisheye image signals of the claimed invention, Petitioner sought to avoid liability by changing only a minor, insubstantial detail of the claimed invention. Its fate should be no different than the defendant in *Graver Tank*.

On page 15 of its petition, Petitioner argues that the Federal Circuit's analysis improperly relieves the patent owner from the burden of showing structural equivalence separate and apart from functional equivalence, such that patentees can "bypass" the structural equivalents analysis of § 112(6). To the contrary, the Federal Circuit carefully considered the evidence showing that the accused

SmoothMove product used structure that was equivalent to the structure disclosed in the patent. Petition at App. 22a-23a:

> Furthermore, Birdwell testified that the SmoothMove Viewer contains structure the same as or equivalent to the structure corresponding to the 'image transform processor means.' We agree that substantial evidence supports the finding of equivalence. Although Infinite [Petitioner] attacks Birdwell's testimony as being conclusory, the testimony is more than that.

The evidence showing equivalence in structure included trial testimony by Dr. H. Lee Martin, showing that a general-purpose computer could be used to perform the transformations that were performed by the special-purpose circuits disclosed in the patent. App. 26a. Petitioner's own software engineer, Scott Gilbert, admitted that the SmoothMove software performed the image transformation by implementing geometry equivalent to that disclosed in Figure 4 of the patent. App. 27a-28a.

And unlike the situation in *WMS Gaming*, the structure disclosed in the patent for the image transform processor means was not limited to a specific mathematical algorithm, but instead encompassed a range of lens types and corresponding algorithms. App. 29a. Consequently, Petitioner's complaints concerning equivalency in structure are nothing more than an attack on the sufficiency of the evidence, a ground on which this Court rarely grants petitions for a writ of certiorari.

D. No Claim Element Was "Entirely Vitiated"

Petitioner argues on page 18 of its petition that the Federal Circuit's decision in this case has allowed the doctrine of equivalents to "entirely vitiate" a required function of the claim. Its argument relies on the Federal Circuit's decision in *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931 (Fed. Cir. 1987) (*en banc*). This argument is in the nature of an allegedly erroneous factual finding, a ground on which this Court rarely grants petitions for a writ of certiorari.

In *Pennwalt*, the Federal Circuit held that where a claimed function was completely missing from the accused device, and there was no equivalent function in the accused device, there could be no infringement either literally or under the doctrine of equivalents. The rule applied in *Pennwalt*, otherwise known as the "all elements rule," provides that a claim can be infringed only if every limitation in the claim is found in the accused device, either literally or by a substantial equivalent. *Pennwalt*, 833 F.2d at 936.

Petitioner argues that the court found no infringement in *Pennwalt* because the claim in that case required that a "position indicating means" be "responsive to a signal from said clock means and said signal from said second comparison means." According to the court, the requirement of responsiveness to a specific combination of signals was clearly missing from the accused system. Because one of the elements of the claim was not present in the accused device, the "all elements rule" was not satisfied and there could be no infringement.

Petitioner argues that this case is similar to *Pennwalt* in that "the accused device in this case lacks a means operative in response to the specified (and claimed) combination of signals." Petition at p. 19. Petitioner repeatedly refers to the claimed function as requiring a "direct transformation" of signals, a phrase that nowhere appears in the claim. Because Petitioner has mischaracterized the claimed function, its argument carries no weight.

In *Pennwalt*, the Federal Circuit viewed the two functions to be separate and distinct limitations, whereas in this case, the Federal Circuit concluded that only a single limitation was at issue. Petition at App. 24a ("As a preliminary matter, we consider the entire 'image transform processor means' with its two associated functions to be one limitation."). Because the jury found that this single limitation was met by an equivalent in the accused device, Petitioner's attempt to parse the single limitation into pieces and then show the non-equivalence of individual pieces is of no effect. Consequently, there was no violation of the "all elements" rule.

Petitioner also argues that the Federal Circuit's holding permits claim elements to be rewritten in isolation without regard to the context of the claim as a whole. Petition at p. 16. Petitioner's argument misses the mark completely. It is undisputed that every claim element except the image transform processor means was literally present in the accused SmoothMove product. The relevant inquiry is not whether equirectangular panorama signals can be physically substituted for digitized fisheye signals wherever digitized fisheye signals are used in the claimed device, but

rather whether the SmoothMove product includes equivalent structure that performs substantially the same function as the image transform processor means. The Federal Circuit panel amply explained why mere incompatibility among data storage formats did not give rise to a substantial difference. Petition at App. 23a.

CONCLUSION

This Court recognized in *Graver Tank* that the purpose of the doctrine of equivalents is to prevent an accused infringer from avoiding liability by changing only minor, insubstantial details of the claimed invention, while still retaining the essential elements of the invention. As this Court noted, "[o]utright and forthright duplication is a dull and very rare type of infringement." *Graver Tank*, 339 U.S. at 607. This case represents a classic application of that doctrine. Petitioner perpetrated a fraud on the patent by making an insubstantial change – substituting an equirectangular panorama format, a known interchangeable alternative, for the claimed digitized fisheye image format, and achieved the same results as the claimed invention. Because the petition raises no important question requiring resolution by this Court, the petition should be denied.

Respectfully submitted,

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August 5, 2002

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AS YOU WILL SEE FROM YOUR REVIEW OF THE '667 PATENT, SOME OF THE ELEMENTS OF CLAIMS 1 THROUGH 8 OF THE PATENT ARE EXPRESSED AS MEANS TO ACCOMPLISH STATED FUNCTIONS. FOR EXAMPLE, THE IMAGE TRANSFORM PROCESSOR MEANS ELEMENT OF CLAIM 1 OF THE '667 PATENT IS STATED AS

> IMAGE TRANSFORM PROCESSOR MEANS FOR PROCESSING SAID DIGITIZED SIGNALS IN SAID INPUT IMAGE MEMORY MEANS ACCORDING TO SELECTED VIEWING ANGLES AND MAGNIFICATION, AND FOR PRODUCING OUTPUT TRANSFORM CALCULATION SIGNALS ACCORDING TO A COMBINATION OF SAID

DIGITIZED SIGNALS, SAID SELECTED VIEWING ANGLES AND SAID SELECTED MAGNIFICATION.

A CLAIM ELEMENT EXPRESSED IN SUCH A MANNER IS REFERRED TO AS A MEANS PLUS FUNCTION CLAIM ELEMENT. SUCH A CLAIM ELEMENT IS PERMITTED BY TITLE 35, UNITED STATES CODE, SECTION 112, PARAGRAPH 6 WHICH STATES,

AN ELEMENT IN A CLAIM FOR A COMBINATION MAY BE EXPRESSED AS A MEANS OR STEP FOR PERFORMING A SPECIFIED FUNCTION WITHOUT THE RECITAL OF STRUCTURE, MATERIAL, OR ACTS IN SUPPORT THEREOF, AND SUCH CLAIM SHALL BE CONSTRUED TO COVER THE CORRESPONDING

STRUCTURE, MATERIAL, OR ACTS

DESCRIBED IN THE SPECIFICATION

AND EQUIVALENTS THEREOF.

TO PROVE LITERAL INFRINGEMENT OF A CLAIM ELEMENT STATED IN MEANS PLUS FUNCTION LANGUAGE, THE PATENT OWNER MUST PROVE BY A PREPONDERANCE OF THE EVIDENCE THAT SOME ELEMENT OF THE ACCUSED DEVICE PERFORMS IDENTICALLY THE SAME FUNCTION AS THE PATENT CLAIM ELEMENT, AND THAT THE STRUCTURE OF THIS ELEMENT OF THE ACCUSED DEVICE IS IDENTICAL OR EQUIVALENT TO THE STRUCTURE OF THE CORRESPONDING PATENT CLAIM ELEMENT THAT IS DESCRIBED IN THE PATENT SPECIFICATION. I REMIND YOU, AS YOU HAVE HEARD THE PATENT-LAW EXPERTS EXPLAIN IN THIS CASE, THAT THE SPECIFICATION OF A PATENT CONSISTS OF ALL THE WORDS USED TO DESCRIBE AND DISCLOSE THE CLAIMED

INVENTION, INCLUDING THE DRAWINGS AND THE PATENT CLAIMS.

WHILE THE STATUTE, SECTION 112, PARAGRAPH 6, PERMITS A PATENT CLAIM ELEMENT TO BE EXPRESSED IN MEANS PLUS FUNCTION LANGUAGE, THIS DOES NOT MEAN THAT EVERY MEANS OR STRUCTURE FOR PERFORMING THE FUNCTION SPECIFIED IN THE CLAIM ELEMENT IS EQUIVALENT TO THE STRUCTURE DISCLOSED IN THE PATENT SPECIFICATION. THE PATENT OWNER'S BURDEN IN THIS REGARD, IF THE ACCUSED STRUCTURE IS NOT IDENTICAL TO THAT DESCRIBED IN THE PATENT SPECIFICATION, IS TO PROVE BY A PREPONDERANCE OF THE EVIDENCE THAT THE MEANS IN THE ACCUSED DEVICE EMPLOYS THE CORRESPONDING STRUCTURE OR ACTS DESCRIBED

IN THE SPECIFICATION, OR AN EQUIVALENT THEREOF.

THIS ISSUE OF EQUIVALENCE IS FOR YOU, THE JURY, TO DETERMINE. YOUR DUTY IN THIS REGARD IS TO EXAMINE THE PATENT SPECIFICATION TO IDENTIFY THE DISCLOSED MEANS TO PERFORM A FUNCTION SPECIFIED IN A MEANS PLUS FUNCTION CLAIM ELEMENT WHICH THE PLAINTIFF ALLEGES HAS BEEN INFRINGED, AND THEN TO DETERMINE WHETHER THE ACCUSED DEVICE USED AN EQUIVALENT OF THE DISCLOSED MEANS TO PERFORM THE IDENTICAL FUNCTION.

I INSTRUCT YOU THAT IN THIS CASE, THE PLAINTIFF IPIX DOES NOT CONTEND THAT THE IMAGE TRANSFORM PROCESSOR MEANS SET FORTH IN THE CLAIMS OF THE '667 PATENT IS

FOUND LITERALLY IN THE INFINITE PICTURES SYSTEM.

LADIES AND GENTLEMEN OF THE JURY:

TO SUMMARIZE UP TO THIS POINT, I HAVE INSTRUCTED YOU CONCERNING THE PLAINTIFF'S THEORIES OF DIRECT INFRINGEMENT, CONTRIBUTORY INFRINGEMENT, AND INDUCEMENT OF INFRINGEMENT. I HAVE INSTRUCTED YOU THAT UNDER ANY OF THESE THEORIES, A PATENT OWNER MAY SEEK TO PROVE LITERAL INFRINGEMENT OR INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS, OR BOTH. WITH RESPECT TO LITERAL INFRINGEMENT, PROOF OF INFRINGEMENT OF A CLAIM REQUIRES PROOF THAT THE ACCUSED DEVICE INCLUDES EVERY ELEMENT OF THAT CLAIM. THIS IS NO LESS TRUE WITH RESPECT TO LITERAL INFRINGEMENT OF A CLAIM WHICH INCLUDES MEANS PLUS FUNCTION LANGUAGE, WITH THE PROVISO THAT

WITH RESPECT TO ANY CLAIM ELEMENT STATED IN MEANS PLUS FUNCTION LANGUAGE, THE PATENT OWNER MUST PROVE IDENTITY OF FUNCTION BETWEEN THE CLAIM ELEMENT AND THE CORRESPONDING ELEMENT OF THE ACCUSED DEVICE, AND THAT THE ACCUSED DEVICE EITHER CONTAINS THE STRUCTURE OR ACTS TO PERFORM THIS FUNCTION THAT IS DISCLOSED IN THE PATENT SPECIFICATION, OR SOME EQUIVALENT STRUCTURE OR ACTS.

IN THIS CIVIL ACTION, THE PLAINTIFF CONCEDES THAT IT CANNOT PROVE LITERAL INFRINGEMENT BY THE DEFENDANT INFINITE PICTURES OF ONE ELEMENT OF CLAIM 1 OF THE '667 PATENT, THE IMAGE TRANSFORM PROCESSOR MEANS ELEMENT. AS I HAVE INSTRUCTED YOU, THE DEFENDANT INFINITE PICTURES SAYS THAT

THERE IS ALSO NO LITERAL INFRINGEMENT OF THE MICROPROCESSOR MEANS ELEMENT OF CLAIM 1 OF THE PATENT. THIS CLAIM ELEMENT REFERS TO

> MICROPROCESSOR MEANS FOR RECEIVING SAID SELECTED VIEWING ANGLES AND MAGNIFICATION FROM SAID INPUT MEANS AND FOR CONVERTING SAID SELECTED VIEWING ANGLES AND MAGNIFICATION FOR INPUT TO SAID IMAGE TRANSFORM PROCESSOR MEANS TO CONTROL SAID PROCESSING OF SAID TRANSFORM PROCESSOR MEANS.

THE DEFENDANT INFINITE PICTURES SAYS THAT IF A DEVICE USING ITS SOFTWARE DOES NOT INPUT

THE USER'S VIEWING ANGLES AND MAGNIFICATION SELECTIONS TO THE IMAGE TRANSFORM PROCESSOR MEANS TO CONTROL THE PROCESSING OF THE IMAGE TRANSFORM PROCESSOR MEANS TO REMOVE DISTORTION FROM A SELECTED PORTION OF THE INPUT FISHEYE IMAGE IN THE INPUT IMAGE MEMORY MEANS, AS OPPOSED TO REMOVING DISTORTION FROM THE ENTIRE INPUT IMAGE SEPARATELY FROM SELECTING THE USER'S VIEWING ANGLES AND MAGNIFICATION, THERE IS NO LITERAL INFRINGEMENT OF THIS CLAIM ELEMENT.

THE DEFENDANT INFINITE PICTURES ALSO DENIES LITERAL INFRINGEMENT OF CLAIM 1 OF THE '667 PATENT WITH RESPECT TO THE OVERALL DESIGNATION OF THE CLAIMED INVENTION IN THE PREAMBLE OF CLAIM 1, THE CLAIM LANGUAGE

BEFORE THE SUBPARAGRAPHS WHICH STATE CLAIM ELEMENTS, AS "A DEVICE FOR PROVIDING PERSPECTIVE CORRECTED VIEWS." THE DEFENDANT INFINITE PICTURES SAYS THAT PROVIDING PERSPECTIVE-CORRECTED VIEWS IS A FUNCTION OF CLAIM 1, THAT THIS CLAIM IS EXPRESSED IN MEANS PLUS FUNCTION LANGUAGE WITH RESPECT TO THIS FUNCTION, AND THAT ITS SMOOTHMOVE PANORAMA WEB BUILDER SOFTWARE DOES NOT EMPLOY THE SAME STRUCTURE OR ACTS AS THE CLAIMED INVENTION FOR PERFORMING THIS FUNCTION.

THIS BRINGS US TO INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS. PLEASE DO NOT CONFUSE THIS DOCTRINE WITH THE REQUIREMENT OF EQUIVALENT STRUCTURE OR ACTS UNDER SECTION 112, PARAGRAPH 6, CONCERNING MEANS PLUS FUNCTION CLAIM ELEMENTS. THAT REQUIREMENT OF EQUIVALENT STRUCTURE OR ACTS IS A LIMITATION ON THE STATUTORY GRANT OF AUTHORITY TO EXPRESS A CLAIM IN MEANS PLUS FUNCTION LANGUAGE, SO THAT NOT EVERY STRUCTURE WHICH PERFORMS THE FUNCTION SPECIFIED IN THE CLAIM IS COVERED BY THE CLAIM. A FINDING THAT AN ACCUSED DEVICE INFRINGES A MEANS PLUS FUNCTION PATENT CLAIM ON THE BASIS OF A FINDING OF IDENTICAL FUNCTION AND

EQUIVALENT STRUCTURE OR ACTS IS A FINDING OF LITERAL INFRINGEMENT.

THE DOCTRINE OF EQUIVALENTS, ON THE OTHER HAND, PERMITS A PATENT OWNER TO PROVE INFRINGEMENT EVEN WHERE LITERAL INFRINGEMENT CANNOT BE SHOWN. THE DOCTRINE OF EQUIVALENTS EXISTS TO PREVENT A PATENT OWNER FROM BEING DEPRIVED OF THE BENEFITS OF ITS PATENT BY COMPETITORS WHO APPROPRIATE THE HEART OF THE PATENTED INVENTION WHILE TECHNICALLY AVOIDING LITERAL INFRINGEMENT OF THE PATENT CLAIMS. IN A CASE IN WHICH A PATENT OWNER SEEKS TO PROVE INFRINGEMENT OF A PATENT CLAIM UNDER THE DOCTRINE OF EQUIVALENTS, THE PATENT OWNER MUST PROVE BY A PREPONDERANCE OF THE EVIDENCE THAT THE

ACCUSED DEVICE PERFORMS SUBSTANTIALLY THE SAME FUNCTION THAT IS PERFORMED BY THE DEVICE CLAIMED, IN SUBSTANTIALLY THE SAME WAY, TO PRODUCE SUBSTANTIALLY THE SAME RESULT. IN OTHER WORDS, THE PATENT OWNER MUST PROVE BY A PREPONDERANCE OF THE EVIDENCE THAT THERE IS IN THE ACCUSED DEVICE AN EQUIVALENT FOR EACH ELEMENT RECITED IN THE CLAIM ALLEGED TO HAVE BEEN INFRINGED, AND THAT EACH SUCH EQUIVALENT IN THE ACCUSED DEVICE PERFORMS SUBSTANTIALLY THE SAME FUNCTION IN SUBSTANTIALLY THE SAME WAY TO PRODUCE SUBSTANTIALLY THE SAME RESULT AS THE CORRESPONDING ELEMENT RECITED IN THE INFRINGED CLAIM. AN ALTERNATIVE FORMULATION OF THE TEST UNDER THE

DOCTRINE OF EQUIVALENTS IS WHETHER THE DIFFERENCES BETWEEN THE CLAIMED DEVICE AND THE ACCUSED DEVICE ARE INSUBSTANTIAL. UNDER EITHER FORMULATION, ALL ELEMENTS OF A CLAIMED INVENTION, OR THEIR EQUIVALENTS, MUST BE FOUND BY YOU IN THE ACCUSED DEVICE.

THE ISSUED OF TECHNOLOGIC EQUIVALENCY BETWEEN A CLAIM ELEMENT AND AN ELEMENT IN AN ACCUSED DEVICE IS AN ISSUE OF FACT FOR YOU, THE JURY, TO DETERMINE. IN DECIDING THE ISSUE OF EQUIVALENCY, YOU MAY TAKE INTO ACCOUNT SUCH EVIDENCE AS EXPERT TESTIMONY, DOCUMENTS, AND THE DISCLOSURES MADE IN PRIOR ART.

IN APPLYING THE DOCTRINE OF EQUIVALENTS, A PATENT CLAIM CANNOT BE CONSTRUED IN A MANNER INCONSISTENT WITH

ANY LIMITATIONS ADDED TO THE CLAIM OR ARGUMENTS MADE TO RENDER THE CLAIM PATENTABLE DURING THE PROSECUTION OF THE APPLICATION WHICH RESULTED IN THE PATENT. A PATENT OWNER MAY NOT RELY ON THE DOCTRINE OF EQUIVALENTS TO TREAT AS INFRINGING ANY DEVICE THAT IS THE SAME AS OR WOULD BE OBVIOUS FROM THE PRIOR ART.

THE DOCTRINE OF EQUIVALENTS CANNOT BE USED TO ENLARGE THE BOUNDS OF A PATENTED INVENTION BEYOND WHAT IS CLAIMED. HOWEVER, THE BOUNDS OF A PATENTED INVENTION ARE NOT ENLARGED IF YOU DO NOT GO BEYOND THE SUBSTITUTION OF EQUIVALENT ELEMENTS. NOR CAN THE DOCTRINE BE USED TO ELIMINATE IN EFFECT AN ELEMENT OF A CLAIM, OR A CLAIM LIMITATION IN THE PATENT.

EACH ELEMENT OF A PATENT CLAIM IS MATERIAL IN DEFINING THE SCOPE OF THE CLAIMED INVENTION, AND SO THAT DOCTRINE OF EQUIVALENTS APPLIES TO THE INDIVIDUAL ELEMENTS OF A CLAIM, NOT TO THE INVENTION AS A WHOLE. IN APPLYING THE DOCTRINE OF EQUIVALENTS, YOU ARE TO ANALYZE THE ROLE OF EACH ELEMENT IN THE CONTEXT OF THE PATENT CLAIM UNDER CONSIDERATION BY YOU.

WITH RESPECT TO THE IMAGE TRANSFORM PROCESSOR MEANS ELEMENT OF CLAIM 1 OF THE '667 PATENT, YOU WILL RECALL THAT IT CALLS FOR SUCH MEANS FOR PROCESSING THE DIGITIZED SIGNALS DERIVED FROM THE OPTICAL IMAGES CAPTURED WITH A CAMERA "ACCORDING TO SELECTED VIEWING ANGLES AND MAGNIFICATION," AND THAT THE IMAGE

TRANSFORM PROCESSOR MEANS PRODUCES OUTPUT TRANSFORM CALCULATION SIGNALS "ACCORDING TOA COMBINATION OF SAID DIGITIZED SIGNALS, SAID SELECTED VIEWING ANGLES, AND SAID SELECTED MAGNIFICATION," IN THE ACCUSED DEVICE, THE DEFENDANT INFINITE PICTURES' SMOOTHMOVE PANORAMA WEB BUILDER SOFTWARE, CONSISTING OF THE SMOOTHMOVE PHOTO SEAMER AND THE SMOOTHMOVE VIEWER, THERE IS PROCESSING ACCORDING TO USER INPUTS OF VIEWING ANGLE AND MAGNIFICATION OF DATA DERIVED FROM ONE OR MORE PHOTOGRAPHS DIGITIZED AND STORED IN AN EQUIRECTANGULAR PANORAMA FORMAT, THE PAN FILE BIT MAP. THE EQUIRECTANGULAR PANORAMA IS FIRST CREATED BY CONVERTING THE ENTIRE INPUT

FISHEYE IMAGE, INDEPENDENTLY OF USER INPUTS. THE PLAINTIFF IPIX SAYS IN THIS CIVIL ACTION THAT THE EQUIRECTANGULAR PANORAMA FORMAT IS AN ALTERNATIVE, INTERCHANGEABLE FORMAT FOR REPRESENTING DIGITIZED SIGNALS CORRESPONDING TO AN IMAGE CAPTURED WITH A FISHEYE LENS, AND THAT THE INTERCHANGEABILITY OF THIS FORMAT WITH THE CLAIMED IMAGE TRANSFORM PROCESSOR MEANS ELEMENT WAS KNOWN TO PERSONS REASONABLY SKILLED IN THE ART AT THE TIME OF THE APPLICATION FOR THE '667 PATENT.

IN DECIDING WHETHER THERE IS INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS, YOU WILL NEED TO DECIDE WHETHER THE SUBSTITUTION OF AN EQUIRECTANGULAR PANORAMA PRODUCES A

SUBSTANTIAL EQUIVALENT OF THE IMAGE TRANSFORM PROCESSOR ELEMENT OF THE CLAIMED INVENTION. TO BE A "SUBSTANTIAL EQUIVALENT," THE ELEMENT SUBSTITUTED IN THE ACCUSED DEVICE FOR THE ELEMENT SET FORTH IN THE CLAIM MUST NOT BE SUCH AS WOULD SUBSTANTIALLY CHANGE THE WAY IN WHICH THE FUNCTION OF THE CLAIMED INVENTION IS PERFORMED. STATED ANOTHER WAY, THE DIFFERENCES BETWEEN THE CLAIMED DEVICE AND THE ACCUSED DEVICE MUST BE INSUBSTANTIAL.

Excerpt from trial testimony of Dr. H. Lee Martin, January 5, 1998, p. 129:

Q. Tell about how the OV-4 came to exist and what it contains?

A. Sure. The OV-4 essentially implemented the algorithms that are described and the methods described in order to take an input image and create an output image and allow you to look around that output place.

Q. Is the OV-4 a general purpose computer?

A. It can perform massive computations, but it is not a general purpose computer.

Q. You used the general purpose computer the first time. Why not use the general purpose computer in Phase II?

A. We simply needed to optimize the speed of processing. At that juncture the best way to do it was essentially to design a piece of equipment to accomplish that.

Q. What if general purpose computers had been faster?

A. Essentially if general purpose computers had been faster we would have implemented to a general purpose computer. That is the way we started on the Macintosh.

Excerpt from trial testimony of Dr. J. Douglas Birdwell, January 7, 1998, pp. 132-133:

Q. Using plaintiff's exhibit 307 can you explain to us how this summarizes your opinion that [sic] regarding the fisheye lens?

A. Yes. There is a quote from the declaration of Infinite Pictures software engineer Scott Gilbert. The quote is "azimuthal equidistant projection is mathematically equivalent to the projection created by an equidistant fisheye lens." The circular image on the left-hand sight [sic] is representative of the fisheye lens picture. The azimuthal equidistant projection is the mathematical name of the transformation from the spherical coordinates or world use of a fisheye lens to what is actually imaged on the plane.

He also states that "the gnomonic projection is mathematically equivalent to the perspective projection in both the Omniview IPIX and Smoothmove systems." The gnomonic projection is the mathematical name of the projection that gives me half the perspectively correct image from spherical data that makes it look correct, as if I were there looking around looking at this visual environment.

Excerpt from trial testimony of Dr. J. Douglas Birdwell, January 7, 1998, pp. 134-135:

Q. We would like to publish it [Trial Exhibit 337] to the jury, place it on the view graph. Summary of Doctrine of Equivalents. Can you explain to us how that summarizes your opinions concerning the equivalence between the accused system and the claim of the '667 patent?

A. Yes. Both the '667 patent and the Infinite Pictures software utilize the gnomonic projection also supported by the declaration of Scott Gilbert the Infinite Pictures software engineer. There's a description of gnomonic projection which is mathematically equivalent to the perspective correction in both the Omniview – and it says the geometry for the oblique projection is from a textbook in Figure 3.

Q. You say a textbook on projections. Does that bear relation to Mr. Gilbert's declaration?

A. I [sic] was attached to the declaration as an exhibit.

Q. Continue.

A. Figure 4 at the bottom left-hand corner is Figure 4 from the '667 patent. It corresponds to the geometry of the perspectively correct projection.

Q. And according to the patent, is that the geometry that is implemented in the image transform processor?

A. Yes.

Excerpt from U.S. Patent 5,185,667 at column 8, lines 1-4:

In addition, these postulates and mathematical equations can be modified for various lens elements as necessary for the desired field-of-view coverage in a given application.

(3)

Supreme Court, U.S.
FILED
AUG 15 2002
OFFICE OF THE CLERK

No. 01-1849

IN THE

Supreme Court of the United States

INFINITE PICTURES, INC.

Petitioner,

v.

INTERACTIVE PICTURES CORPORATION
(formerly known as Omniview, Inc.)

Respondent.

On Petition for Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

REPLY TO BRIEF IN OPPOSITION TO PETITION FOR A WRIT OF CERTIORARI

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August 15, 2002

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IN THE

Supreme Court of the United States

No. 01-1849

INFINITE PICTURES, INC.

Petitioner,

v.

INTERACTIVE PICTURES CORPORATION
(formerly known as Omniview, Inc.)

Respondent.

On Petition for a Writ of Certiorari to the
United States Court of Appeals
for the Federal Circuit

REPLY TO BRIEF IN OPPOSITION TO PETITION FOR A WRIT OF CERTIORARI

Petitioner has requested a writ of certiorari to address the unresolved conflict between the judicial doctrine of equivalents and the congressionally-mandated equivalents analysis of 35 U.S.C. § 112(6), with respect to functionally-claimed elements. The doctrine of equivalents should not apply to elements whose construction has been mandated by statute. Even if applicable, however, those claim elements should not be construed in a way that nullifies the statutory interpretation command.

I. The Issue of Whether or not the Doctrine of Equivalents Should Apply to Elements Drafted to Invoke § 112(6) was Decided by the Court of Appeals for the Federal Circuit but has not been Addressed by this Court.

Respondent contends that the issue of whether the doctrine of equivalents can apply to § 112(6) elements was not addressed or decided by the Federal Circuit. Contrary to that contention, this is not an unrelated or tangential issue that is beyond the reach of this Court. Rather, neither the District Court nor the Federal Circuit could have reached their decisions without deciding this issue. Relying solely on *WMS Gaming, Inc. v. Int'l Gaming Tech.*, 184 F.3d 1339 (Fed. Cir. 1999), the Federal Circuit expressly held that the doctrine of equivalents could be applied where there was no infringement under 35 U.S.C. § 112(6). *See, e.g.*, Brief in Opposition to Petition for Writ of Certiorari (Opposition) p. 10. That holding is the subject of this appeal.

In any event, it should be noted that Petitioner, in its opening brief to the Federal Circuit, challenged the application of the doctrine of equivalents to this § 112(6) claim element. After explaining the proper construction procedure for § 112(6) limitations, Petitioner argued in Appellant's brief at page 30 that "IPIX tried to short-circuit this statutory analysis by resorting to the doctrine of equivalents."

A. The Federal Circuit's Application of the Doctrine of Equivalents to a § 112(6) Element Presupposes that the Doctrine can be Properly Applied to Such Elements.

The Federal Circuit could not have upheld the infringement finding under the doctrine of equivalents without first concluding (or simply presupposing) that the doctrine could be applied to a § 112(6) claim element. The Federal Circuit, in fact, assumed that

the doctrine of equivalents could apply to a claim element drafted to invoke § 112(6), but failed to adequately consider or address the inherent conflict in applying both equivalents analyses to a single functional claim limitation.

The only case prior to this one that affirmed a determination of infringement under the doctrine of equivalents where the means-plus-function element at issue was not met literally under § 112(6) was *WMS Gaming*. At least in *WMS Gaming*, however, the Court first undertook a structural equivalents analysis under § 112(6) to determine a range of equivalent structure before beginning its doctrine of equivalents analysis with respect to the function. 184 F.3d at 1348-51.

Respondent further contends that the Federal Circuit's denial of the petition for rehearing *en banc* both shows that it "declined to entertain [a] new issue" and also "indicates that there is no doubt on [the issue of whether the doctrine of equivalents can apply to § 112(6) elements]." Opposition pp. 4, 14. These conflicting arguments suggest that the Court decided this issue on the merits while declining to even consider it. The opinionless denial of the petition for rehearing *en banc*, however, cannot be interpreted as supporting either contention. The reason for the denial of rehearing is not discernible.

B. If Application of the Doctrine of Equivalents to Functionally-claimed Elements Invoking § 112(6) is Precluded by Statute, Neither the District Court nor the Fed. Circuit had the Authority to Impose Liability.

Congress has the controlling authority to legislate on patent matters under Article I, § 8, cl. 8 of the Constitution. Congress has exercised that power through § 112(6) – the only provision in the patent

statute directing a claim construction methodology. Application of the doctrine of equivalents to § 112(6) claim elements abrogates the statutory claim construction requirements and violates the public-notice and definitional requirements of patent claiming.

If, therefore, as Petitioner contends, Congress has established § 112(6) as the exclusive mechanism for the interpretation of functionally-stated claim elements, then neither the District Court nor the Federal Circuit has the authority to bypass those statutory requirements through application of the doctrine of equivalents. The Court should hear this case to resolve this conflict between the legislative and judicial branches of government.

Contrary to Respondent's position, this is not the same as the issue presented to this Court in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 41 USPQ2d 1865 (1997). In *Warner-Jenkinson*, the Court concluded that the enactment of § 112(6) did not *replace* the doctrine of equivalents. *Warner-Jenkinson*, however, did not deal with a § 112(6) claim element and the Court therefore did not address the relationship between the two "equivalents" approaches when both forms of equivalents are implicated. *See* 520 U.S. at 28. The Court, in particular, did not address which approach would trump when both approaches were applied to a single claim element.

II. Even if the Doctrine of Equivalents can be Applied to § 112(6) Claim Elements, it Cannot be Used to Completely Untether the Claim from its Statutorily-Mandated Construction.

The trial court in effect construed the "image transform processor means" under the doctrine of equivalents instead of under § 112(6). This approach, affirmed by the Federal Circuit, enabled infringement to be found even though the accused structure and its

function differ substantially from those described and claimed in the patent.

A. The Decision Below Permits an Infringement Finding With Respect to a Functional Claim Element Without a § 112(6) Structural Equivalents Analysis.

For microprocessor and computer elements, such as the image transform processor means, the structure is not merely the general-purpose computer or microprocessor but, rather, the computer or processor programmed to perform the disclosed algorithm. *See, e.g., WMS Gaming*, 184 F.3d at 1348-51; *In re Alappat*, 33 F.3d 1526, 1545, 31 USPQ2d 1545, 1558 (Fed. Cir. 1994) *(en banc)*. The identification of the disclosed algorithm is an essential part of determining the proper scope of such claim elements. *See id.*

Respondent's sweeping assertion that the structure corresponding to "the image transform processor means was not limited to a specific mathematical algorithm, but instead encompassed a range of lens types and corresponding algorithms" (Opposition p. 15) illustrates precisely the error in the Respondent's reasoning and that of the Court below. Irrespective of the expansive patent boilerplate cited by Respondent, the image transform processor means of claim 1 is expressly limited to processing digitized fisheye images from a hemispherical fisheye lens.[1] The corresponding structure, therefore, must be the algorithm disclosed in the specification for performing that function, not

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[1] Claim 1, by its express terms, requires a *fisheye lens* that produces optical images corresponding to a *hemispherical* field-of-view, for which the precise algorithm is set forth in the specification (col. 5 through col. 7) as well as dependant claim 9, which Respondent did not assert as being infringed. *See* Petition App. 5a.

some other algorithm that is not even described in the patent.

Respondent's position would completely eliminate the requirement to look to the corresponding structure for performing the recited function, and would permit any structure to satisfy the claim limitation as long as the function was equivalent. Using this approach, it therefore becomes impossible to follow the construction guidelines of § 112(6) because the function is no longer tied to the recited function, but, rather, could be any arguably "equivalent" function with a corresponding structure not even expressly disclosed or described in the patent specification.

This approach, implicitly affirmed by the Federal Circuit, therefore improperly relieves the patentee of the burden of showing structural equivalence separate and apart from functional equivalence. Patentees who argue the doctrine of equivalents are therefore allowed to bypass the statutory structural equivalents analysis of § 112(6) for those claim elements.

B. The Decision Below Allows Application of the Doctrine of Equivalents to Entirely Vitiate a Required Function of the Claim.

In both *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931 (Fed. Cir. 1987) (*en banc*) and in this case, specific limitations of a means-plus-function element are not present in the accused device. In *Pennwalt*, those differences formed the core of the Federal Circuit's determination of non-infringement. Respondent's attempt to distinguish *Pennwalt* on this point is flagrant sophistry. *See* Opposition p. 17.

In this case, as claimed, the "image transform processor means" expressly requires transformation "according to a combination of said digitized [fisheye] signals, said selected viewing angles and said selected magnification." Petition App. 5a. Regardless of

whether the phrase "direct transformation" appears in the claims, the very nature of these combined inputs dictates that the claimed transformation is direct. The selected viewing angles and magnification are combined with the digitized fisheye signals to produce the perspective-corrected view.

As acknowledged in the Respondent's exhibits, the accused device does not use this claimed combination of signals. Petition App. 56a. In Petitioner's product, rather, the entire fisheye image must first be converted into an equirectangular image using a first transform, which is independent of any selected view and magnification. Only then can a second transform be used, along with a selected viewing area and magnification, to produce the perspective-corrected image. *See id.*

As in *Pennwalt*, therefore, the accused device in this case lacks a means operative in response to the specified (and claimed) combination of signals. By permitting a finding of infringement, the lower courts permitted the function of transforming "according to the combination" of the claimed signals to be vitiated in its entirety.

This approach is contrary to the directive of this Court in *Warner-Jenkinson*:

> Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole. It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety.

520 U.S. at 29.

CONCLUSION

The Court should take this case to declare that the doctrine of equivalents is inapplicable to § 112(6) elements because it runs afoul of the statutory limits on functional claiming. The Court must enunciate standards to ensure that the application of the judicial doctrine does not eviscerate the statutorily-mandated construction requirements of § 112(6) or the requirements of the all-elements rule as applied to those claim elements.

Accordingly, the Court should grant the petition for a writ of certiorari.

Respectfully submitted,

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August 15, 2002